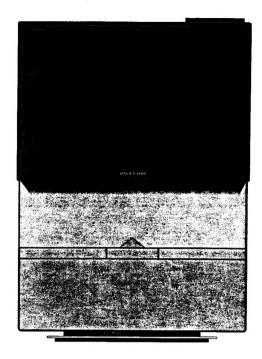
BANG & OLUFSEN



BeoVision Avant - TV 50Hz MKIII

Type 8100, 8101, 8102, 8103, 8104, 8105, 8106, 8107, 8108

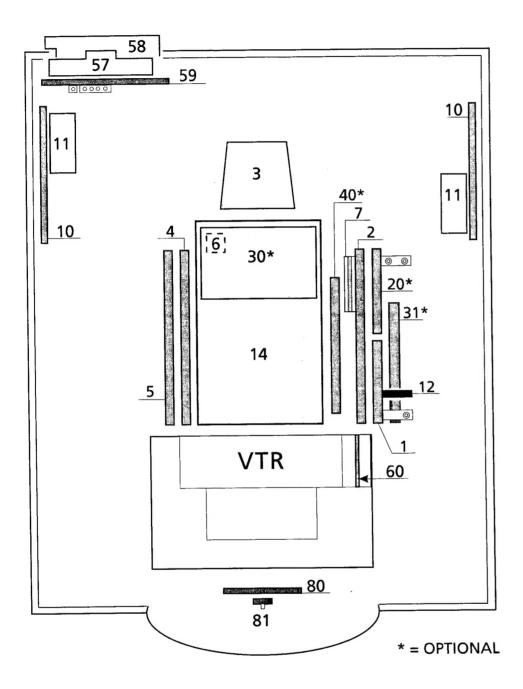
Service Manual

English text German text French text

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Survey of moduls

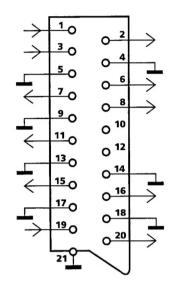


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| SPECIFICATION GUIDELINES FOR SERVICE USE | BeoVision Avant MKIII |
|--|---|
| CTV system | * See type survey |
| Cabinet finish | High-gloss lacquer: Pearly black, Pearly grey, |
| | Pearly red, Pearly green, Pearly blue |
| Picture tube / Visual picture | 72 cm - 28" / 66 cm - 26" (16:9) |
| | Black Line, Black Matrix |
| | |
| Vision Clear | |
| Contrast screen | Grey glass antireflex coating |
| Colour Transient Improvement | Wideband CTI |
| | Adaptive & Dynamic Luminance Peaking with Noise Reduction |
| | Scan Velocity Modulation |
| | 100 Hz |
| | Field rate upconversion |
| | Motion compensation |
| | Automatic Cut-Off |
| | Automatic Picture Control |
| Operation | Beo4 Terminal (included) |
| | Local Control |
| | Local Control |
| TV tuner range | 45-860 MHz: VHF, S-band, Hyper-band, UHF |
| No. of TV programmes | 99 |
| Station identification | Program list |
| Picture formats | 4 Automatic selected + 2 Manual selected |
| Teletext | Improved Teletext - Fasttext (FLOF), 7 languages, |
| | 4 memory pages per program |
| Stereo decoder | * Nicam + A2 + A2 dual language |
| A2 | |
| Channel separation | > 26 dB |
| Signal/noise ratio | > 50 dB weighted |
| NICAM (option) | |
| Channel separation | > 50 dB |
| Signal/noise ratio | > 70 dB weighted in audio mode, > 50 dB weighted in TV mode |
| Sound | |
| Speaker system | 2 x Bass reflex (Net. volume 3.5 litres) |
| Woofer | 11.5 cm (4½") |
| Tweeter | 1.8 cm (3/4") |
| Sound pressure level | 97 dB |
| Distortion 250 - 1,000 Hz | < 2% 90 dB SPL, 1m |
| Distortion 1,000 - 5,000 Hz | < 1.5% 90 dB SPL, 1m |
| Effective frequency range | 50 - 20,000 Hz |
| Bass control | ±12 dB |
| Treble control | ±12 dB |
| Bass equalizer | Adaptive (ABL) |
| Crossover principle | Active crossover network, 24 dB/octav, Linkwitz/Riley |
| Crossover frequency | 4500 Hz |
| Crossover in equaticy | 7300 112 |
| Motorized Stand | ±35 degrees turning range |
| | Two memory positions + neutral memory position |

| Other data | |
|-----------------------------|--|
| Mains voltage | 180 - 265 volts 50/60 Hz |
| Power consumption | Typical 105 watts |
| Power consumption Stand-by | < 3 watts |
| Dimensions W x H x D/weight | 73 x 103 x 58 cm/68 kg |
| | |
| Satellite (option) | |
| Sat tuner range | 950-2050 MHz |
| Sat system tunings range & | |
| requency display readout | 10,700 - 12,750 MHz |
| No. of Satellite programmes | 119 |
| Tuner input level | -65 to -30 dBm, 75 ohm |
| ound | |
| requency range | 20 Hz - 15 kHz |
| Main mono | 5.80 MHz (J17 deemphasis) |
| | 6.50 MHz / 6.65 MHz (50 μsec deemphasis) |
| Bandwidth | 280 kHz |
| Expanded sub mono | 7.02 MHz / 7.20 MHz / 7.38 MHz / 7.56 MHz / 7.74 MHz / |
| | 7.92 MHz / 8.10 MHz / 8.28 MHz |
| Bandwidth | 130 kHz |
| Deemphasis | Expanded |
| • | Experience |
| Stereo | L 7.02 MHz, R 7.20 MHz / L 7.38 MHz, R 7.56 MHz / |
| | L 7.74 MHz, R 7.92 MHz / L 8.10 MHz, R 8.28 MHz |
| Bandwidth | 130 kHz |
| Deemphasis | Expanded |
| ODU | |
| LNB support | Dupole |
| Polarity select | 14/18 volt or tone switch on coax |
| Band switch | 14/18 volt or tone switch on coax |
| | 14/10 VOIC OF COILE SWITCH OFF COAX |
| Dolby Surround (option) | Dolby Pro Logic |
| Sound modes | Sound 1: Stereo in internal speakers |
| | Sound 2: Stereo in Power Link front speakers |
| | Sound 3: Dolby left/right in Power Link front speakers |
| | Center in internal speakers |
| | Sound 4: Stereo in Power Link front & rear speakers |
| | Sound 5: Center in internal speakers |
| | Dolby left/right in Power Link front speakers |
| | Dolby rear in Power Link rear speakers |
| Accessories | · |
| NICAM module | 1414400 system B/G/L or B/G/I depending of the TV type |
| Satellite module | 1414200 * |
| Extern Satellite Positioner | 1417066 |
| Extern Power Positioner | 1417266 |
| Picture in Picture module | 1414100 |
| Dolby Surround module | 1414000 |
| AV2 Expander box | 8089086 |

V.TAPE (AV1), AV (AV2) & DECODER (AV3)



| Pin 1 | Audio R out 1V RMS 820 ohms | |
|-----------|--|------|
| Pin 2 | Audio R in 1V RMS 47 kohms | |
| | | |
| Pin 3 | Audio L out 1V RMS 820 ohms | |
| Pin 4 | Audio GND | |
| FIII 4 | Addio divid | |
| Pin 5 | Blue GND | |
| | | |
| Pin 6 | Audio L in 1V RMS 47 kohms | |
| Pin 7* | Blue in 0.7 Vpp 75 ohms (note 1) | |
| FIII 7 | Bide III 0.7 Vpp 73 offins (flote 17 | |
| Pin 8 | Play voltage: Logic 0 = 0V to 2V | |
| | Logic 1 = 9.5V to 12V (4:3 info) | |
| | 5V = 16:9 info | |
| | Data out (AV2 only) | |
| | | |
| Pin 9 | Green GND | |
| | | |
| Pin 10 | Not used | |
| Pin 11* | Green in 0.7 Vpp 75 ohms | |
| | diedi iii 0.7 Vpp 73 diiiiis | |
| Pin 12 | Not used | |
| | | |
| Pin 13 | Red GND | |
| Pin 14 | Blanking GND | |
| 111114 | Didriking City | |
| Pin 15* | Red in 0.7 Vpp 75 ohms (note 1) | |
| | | |
| Pin 16* | Blanking in Logic 0 = 0V to 0.4V | |
| | Logic 1 = 1V to 3V | |
| | R in 75 ohms | |
| | VI. L. CND | |
| Pin 17 | Video out GND | |
| Pin 18 | Video in GND | |
| | Video III dii D | |
| Pin 19 | Composite video out 1 Vpp 75 ohms (note | 2) |
| | | |
| Pin 20 | Composite video in 1 Vpp 75 ohms (note | 2) |
| Pin 21 | Shield | |
| | | |
| * = Not | used on AV1. | |
| Note 1: | On AV2 pin 15 is also used for C in and pin 7 forC | out. |
| Note 2: C | On AV2 pin 20 is also used for Y in and pin 19 for Y out | - |
| | | |

| MASTER LINK | Pin 1 Data0.25V ±0.1V |
|--|---|
| | Pin 2 Data+ +0.25V ±0.1V |
| 0 1 - | Pin 3 ML sense |
| 03- 04- | Pin 4-10 N.C. |
| o 5 - o 6 - o 7 - | Pin 11 -supply voltage -7V to -15V (in standby -3V to -15 |
| 07 - 08 - 09 - | Pin 12 +supply voltage +7V to +15V (in standby +3V to +15 |
| •10 | Pin 13 Audio -L 1V Bal, Rin 2.2Mohms, Rout 75ohms |
| 0 3- 0 4 - | Pin 14 Audio +L 1V Bal, Rin 2.2Mohms, Rout 75Mohms |
| 015- 016 - | Pin 15 Audio -R 1V Bal, Rin 2.2Mohms, Rout 75ohms |
| | Pin 16 Audio +R 1V Bal, Rin 2.2Mohms, Rout 75ohms |
| 5-VHS | Pin 1 Y GND |
| 3 | Pin 2 C GND |
| 1 2 | Pin 3 Luminance in (Y) 1 Vpp 75 ohms |
| | Pin 4 Chrominance in (C) 1 Vpp 75 ohms |
| VIDEO | Composite video in 1Vpp 75 ohms |
| L & R | Audio L & R in 0.2V - 2 V RMS >10 kohms |
| PHONES | Ø 3.5 mm 220 ohms |
| POWER LINK FRONT & REAR | Pin 1 PL ON = >2.5V, OFF = <0.5V |
| 2 | Pin 2 Signal GND |
| 5 | Pin 3 Audio L out 0V - 2V RMS |
| $3 \Rightarrow \begin{pmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{pmatrix} \leftarrow 1$ | Pin 4 PL speaker ON = >2.5V, OFF = <0.5V |
| 7 6 | Pin 5 Audio R out 0V - 2V RMS |
| 8 | Pin 6 Data: High >3.5V, Low <0.8V |
| | Pin 7 Data GND |
| | Pin 8 Not used |
| | |
| Subject to change without notice | |

TYPE SURVEY 1-5

| *TYPE SURVEY | | Mounting modules for modification to other TV transmission systems (Only the TV part) | | | | |
|--------------|-------------|---|---------------------|-------------------------|-------------------------------|--|
| Type | System | | NICAM SYSTEM | PAL/SECAM B/G/L/L'/I | PAL/SECAM/NTSC B/G/D/K/M/I | |
| 8100 | B/G | EU | B/G | 8008326 | 8008325 | |
| 8101 | B/GL/L' | F(EU) | B/G/L | 8008326 | 8008325 | |
| 8102 | B/G/D/K/M/I | НК | B/G/I | 8008326 | | |
| 8103 | ı | GB | 1 | 8008326 | 8008325 | |
| 8104 | B/G | Italy | B/G | 8008326 | 8008325 | |
| 8105 | B/G | AUS | B/G | 8008326 | 8008325 | |
| 8106 | B/G/D/K/M/I | East EU | B/G/I | 8008326 | | |
| 8107 | B/G/D/K/M/I | TAI | | 8008326 | | |
| 8108 | B/G/L/L'/I | F(GB) | B/G/L ¹⁾ | | 8008325 | |

¹⁾ It is not possible to receive NICAM system I.

All TV's mentioned are equiped with PAL/SECAM/NTSC colour decoder.

All TV's mentioned can be equiped with NICAM system B/G/I or B/G/L stereo decoder on request.

8008326 Tuner & IF system B/G/L/L'/I PCB.

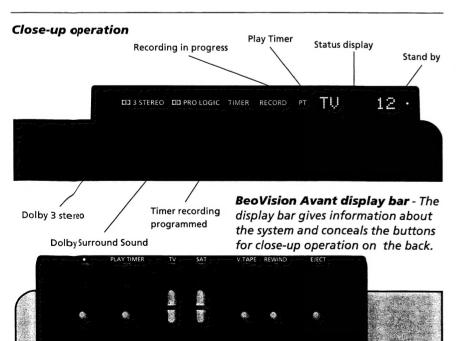
8008325 Tuner & IF system B/G/D/K/M/I PCB.

If the TV is modified to another TV transmission system, the values in the "TV service setup" menu must be changed (see section 5 REPAIR TIPS).

BRIEF OPERATION GUIDE

Operating the on-screen menus on BeoVision Avant with Beo4. The menus may differ with built-in kits.

| THE MEN | as may arrier with built in kits | • | |
|--------------|--|-------------|---|
| Main/da | ily operations Switches on to the TV program | TEXT (**) | Switches to teletext |
| | you were last watching | | Press >> or << to leaf through the four memory pages; or key |
| SAT ~ | Switches on to the satellite TV program you were last watching | | in the teletext page number you want |
| through | Press to select a specific program number | Le EXIT les | Press to return to watching TV |
| | Press to step through your | then | Press to display CLOCK |
| or | programs | GO | Press to see the time on the Avant display |
| | | | Press again to remove the time |
| ⇒ VTAPE ₹ | Press to start playing the video | | December disease STAND |
| | tape | then | Press to display STAND |
| STOP == | Pauses the video tape Press again to stop playback | or | Press to turn the system to the left |
| GO | Press any time to start/resume playing the tape | right | Press to turn the system to the |
| or | Press to rewind the tape | EXIT - | Removes STAND from the display |
| | Press to fast forward the tape | AFA LIST | Press to display FORMAT |
| | Press to raise the volume | then | Adapt the current picture to the BeoVision Avant picture screen |
| E E | Press to lower the volume | | |
| 5-2 6 | Press to switch to stand-by | | Alternatively, press ▲ or ▼ to select the exact format you want |



MENU (General options):

Calls up the main menu

Press to move the cursor (red text) to the other items in the menu

> Make sure that the item/function you want is lit up in red...

then Press to call up the menu for that particular function

> Alternatively, just key in the number shown against the item you want

Press to remove the menus

from the screen altogether

Press any time to return to the previous menu

In fill-in menus:

Press to move the cursor (red text) from item to item in the

> When an item turns red, it can be changed:

Press to key in numbers through

Removes FORMAT from the

display

Press to reveal other options

When you have filled the required information into the menu,...

...press to accept it

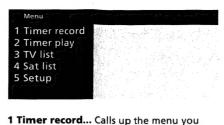


BeoVision Avant easy-access socket panel

Just below the operation panel you will find a small socket panel conveniently placed for connection of headphones and camcorder.

BeoVision Avant operation panel -The buttons are placed on the rear

2 Sat side of the display bar.



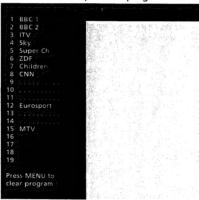
must use to program a timer recording



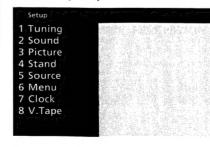
2 Timer play... Calls up the menu you must use to program the timer play/stand-by



3 TV list... Calls up the TV program list



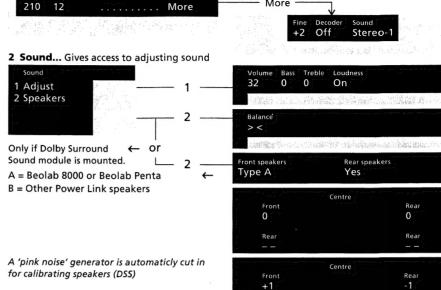
- 4 Sat list... Calls up the satellite program list. This item only appears if your BeoVision Avant is equipped for satellite TV reception - if not, Setup (see below) will be item number 4.
- 5 Setup... Calls up the BeoVision Avant Setup menu, which gives access to presetting the system.



Tuning access menu



1 Tuning... Gives access to tuning in to TV and satellite TV stations 210



3 Picture... Gives access to adjusting the picture

| 1 | Brilliance 1 | Colour | Contrast | |
|---|--------------|--------|----------|---|
| | 32 | 32 | 44 | |
| | | 2.47 | 3.3 | • |

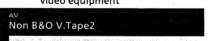
Nominal values

4 Stand... Gives access to presetting your favourite viewing angles for the motorised stand



0 = stand-by position 1 = preferred position 2 = other stored position

5 Source... Calls up the AV Source menu in which you must register any extra video equipment



V.Tape 2, S-VHS V.Tape 2, CDV or Decoder - 2

6 Menu... Gives access to switching the menu guidance function on and off

On

Automatic on-screen menu text guidance

7 Clock... Gives access to setting the built in clock in the BeoVision Avant 14:00 Tue 23 Aug 1994 Yes Yes

Synch = teletext time synchron ize ? Display = time displayed ?

8 V.Tape... Calls up the special menus for the video tape recorder in which you must register your preferences

V.Tape access menu



Refer to VTR Service Manual for further information (Brief Operation Guide)

Beo4

The Beo4 remote control gives you the possibility to set it up to match any Bang & Olufsen system in the best possible way. This is done by means of option programming and the add/remove functions in Beo4. Only the functions (cues) relevant for a given setup should be found visible in the display.

Option programming

Enables you to pre-program a Bang & Olufsen product setup.

Beo4 display

Press and hold

Then press shortly

OPTION?

Calls up the list of cues

V.OPT

Select option type (toggle) A.OPT, L.OPT

or V.OPT

Key in the option number

To leave option setup

The BeoVision Avant can be programmed for the following setup situations:

Option 0. Used if you want to disable remote control operation of the BeoVision Avant.

Option 1 (factory setting). Used in a one-room setup either with the BeoVision Avant on its own, or in an AV integrated setup with a pair of speakers connected to the audio system.

Option 2. Used in a two-room setup, or in a one-room setup with no speakers connected to the audio system (fully integrated AV system).

NOTE:

Please refer to the special User's Guide or Setting-up Guide for further information.

Customizing the Beo4

Enables you to pre-program the Beo4 to match any Bang & Olufsen system. Remove not relevant functions (cues), and add functions you want to appear when pressing LIST in daily use.

Beo4 display

Press and hold

Then press shortly

OPTION?

Select function (toggle)

ADD or REMOVE (or OPTION?)

BRIEF OPERATION GUIDE 1-7

Calls up the list of cues

REPEAT or FORMAT

Toggle through cues

Press to add/remove cue

Removed cues blinks (off = ADD cue)

Press for next cue

To leave add/remove setup

Satellite ODU-set-up

TV on

Main menu Set-up menu

Tuning menu Choose Sat in the menu Select the special programming

menu for the Out Door Unit

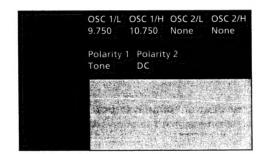


ODU set-up

The satellite receiver has two inputs (1 and 2), which permits two ODU's to be connected, even if they operate within the same frequency band.

Fill in the menu with and perhaps Store changes in the menu by

pressing oo or by going out of the menu by pressing EXEXIT CO.



Tuning to satellite stations

TV on Main menu

Set-up menu

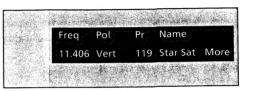
Tunina menu Sat tuning menu*

When the ODU setup menu has been filled in it is possible to store the programmes in the Sat-tuning menu.

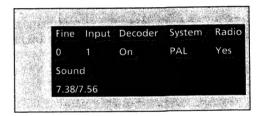
Fill in the menu with

and perhaps - 0 - - - - 9 cm/

See the BeoVision Avant setting-up quide for further information.



Select More and press Go Go



The submenu under Sat-tuning contains the more specialized programming options. Fill in the menu with

Store changes in the Sat-tuning menu by pressing a go a, and abandon the menu by pressing □ EXIT ~

BeoVision Avant's satellite receiver is preprogrammed from the factory with all the stations currently being transmitted by the Astra satellites.

Surfaces

Wipe dust off the surfaces of your BeoVision Avant using a dry, soft cloth.

If necessary, remove grease stains or more persistent dirt with a firmly wrung lint-free cloth which you have dipped in a solution of water containing a few drops of a mild detergent.

To clean the picture screen use a mild window cleaning fluid. Make sure no streaks or traces of the cleaning fluid are left on the screen.

EXPLANATION OF DIAGRAM

Type numbers of transistors and ICs are indicated on the diagrams. If the position number is followed by an asterisk the spare part number must always be used because the component in question has been specially selected, e.g. TR102*.

Component print and coordinate system

The largest PCBs have component prints and a coordinate system on both the print and the component side.

On the diagrams every component has a coordinate number. This indicates in which coordinate on the PCB the component is situated. The coordinate numbers are written in smaller print types than the position numbers.

Control circuit

In certain control circuits the active mode is indicated by a function term or by an abbreviation. This may be e.g. ST.BY. = low in the stand-by mode or ST.BY. = high in the stand-by mode.

Wiring connections

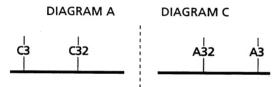
The wiring connections on the diagrams are assembled in 'bundles'. The individual wires are provided with one of the following codes:

INTERNAL CONNECTION ON ONE DIAGRAM PAGE



CONNECTION TO ANOTHER DIAGRAM PAGE

Internal connections on a diagram page are indicated by a number. The bend of the wire indicates in wich direction the other end of the wire is found.



A connection to another diagram page is indicated by a number as well as by letter of the diagram to which the connection leads.

Ground symbols

Three different ground symbols are used in the diagrams:.

= Ground that is not galvanically separated from the mains. (Used on PCB4).

_ = Ground

___ = Digital ground

Signal paths and IC markings

The signal paths are shown in the diagrams by means of semibold lines and arrow heads.

As shown, two different types of arrow head are used:

= Video, luminance and chrominance signals

-->> = Sound signal

The arrow heads shown in the IC pins tell wether the pins tell whether the pin indicated is an input or an output.

Measuring conditions

Measure all DC voltages in relation to ground and with voltmeter or oscilloscope with inner resistance of at least 2Mohm.

Measure DC voltages and oscilloscope pictures in TV mode at an UHF aerial (colour bar) of approx. 1.5mV. Brilliance step 32, contrast step 44 and colour saturation step 32.

Oscilloscope pictures on the signal path in connection with the AV2 socket on diagram H and I are measured with Y/C signal on AV2.

Symbol of safety components



When replacing components with this symbol, the same type has to be used, also the same values for ohm and watt.

The new component is to be mounted in the same way as the replaced one.

Lithium battery

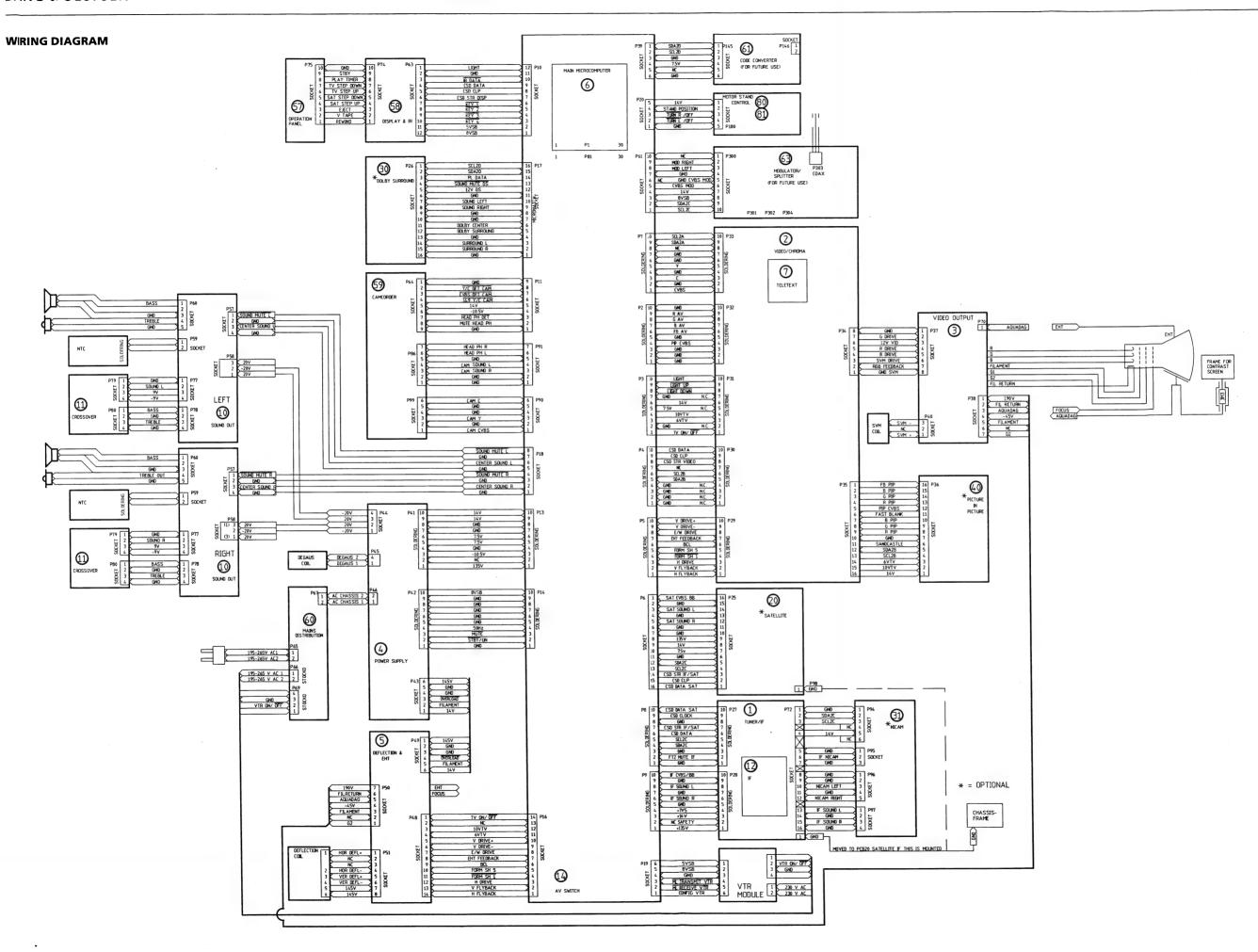


WARNING

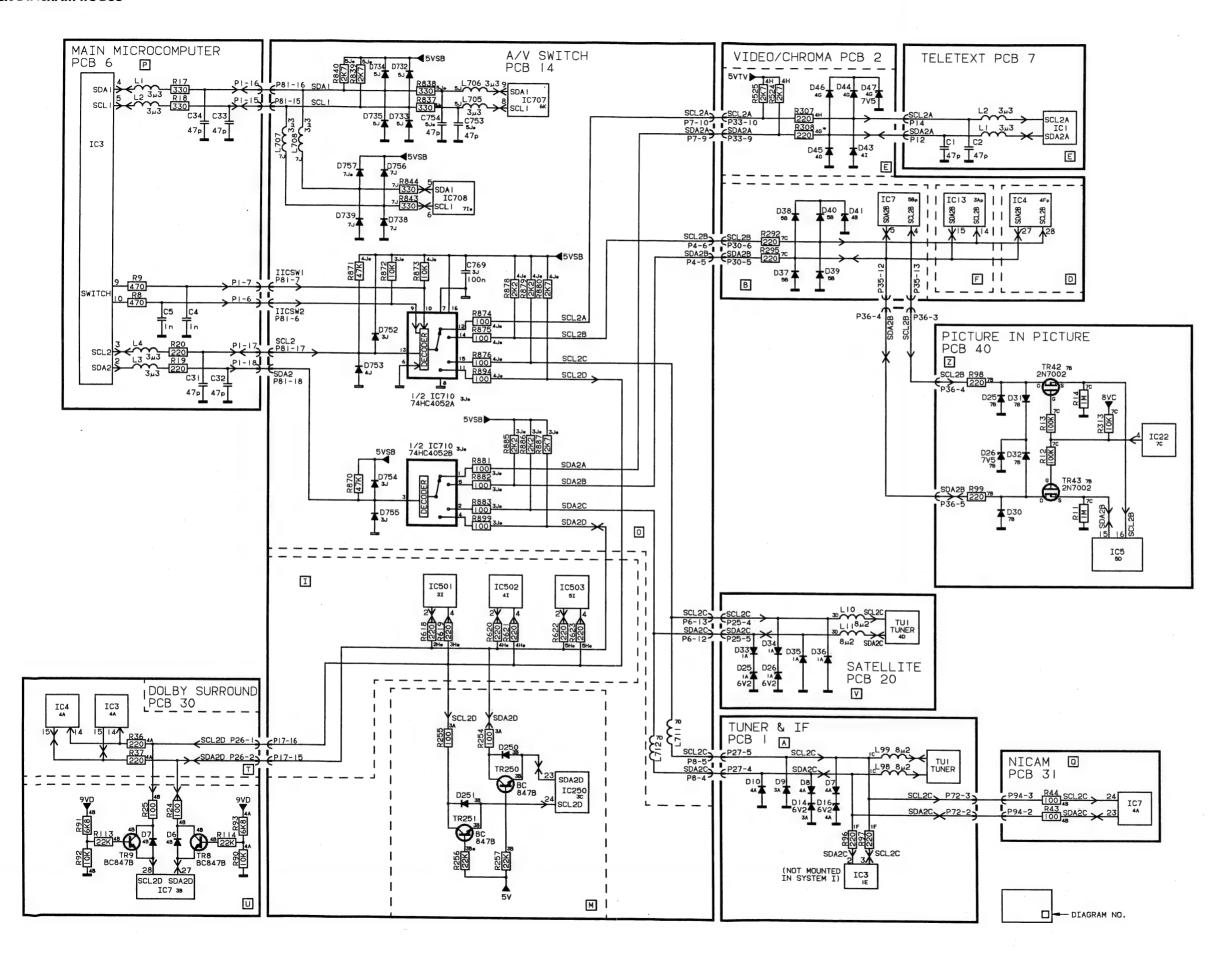
Short-circuit and overcharging of some types of lithium batteries may result in a violent explosion.

When replacing the lithium battery in this set, note the following: Use **only** batteries at the same make and type as mentioned in the service manual.

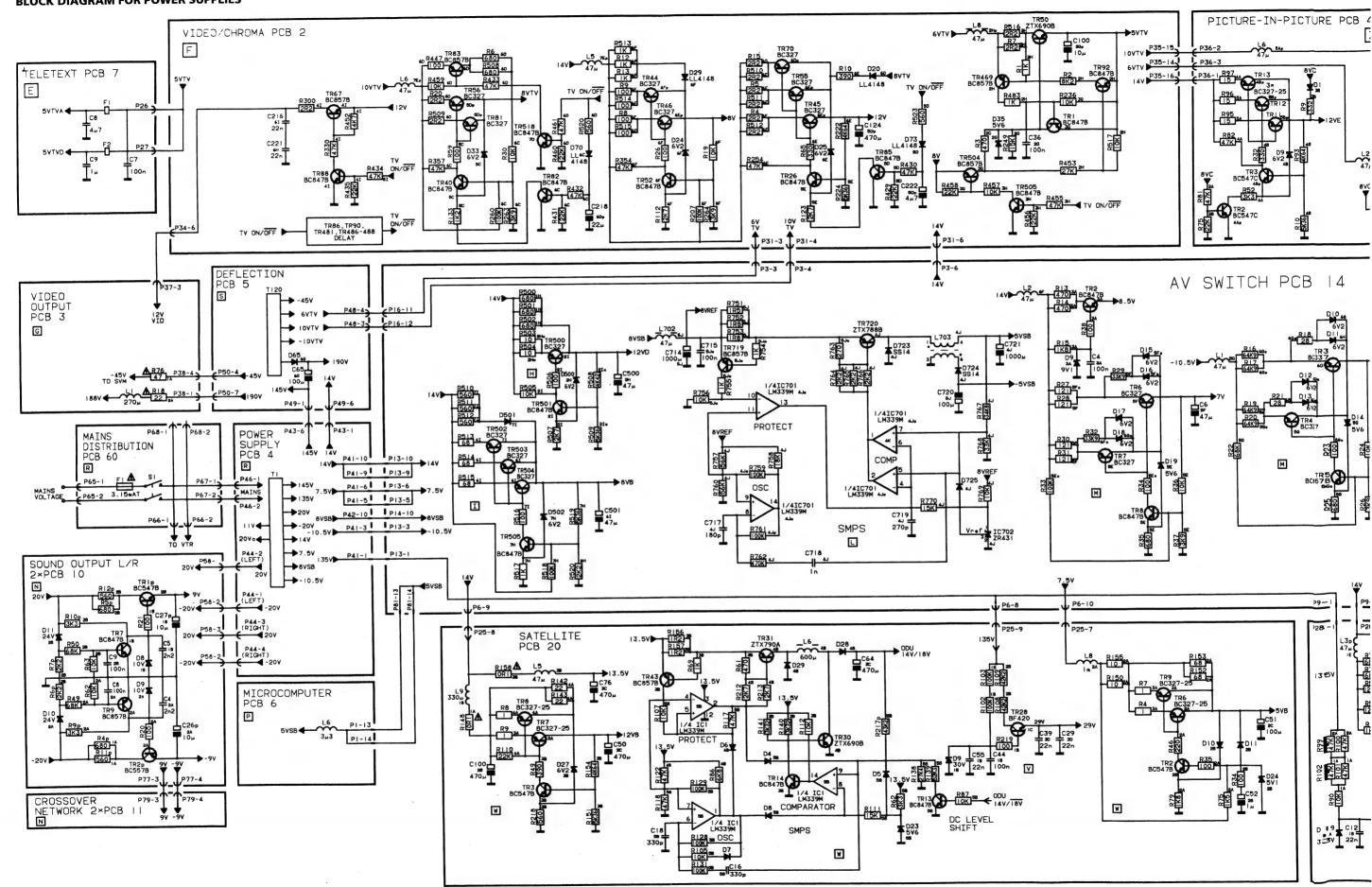
Place the battery exactly like the old one.

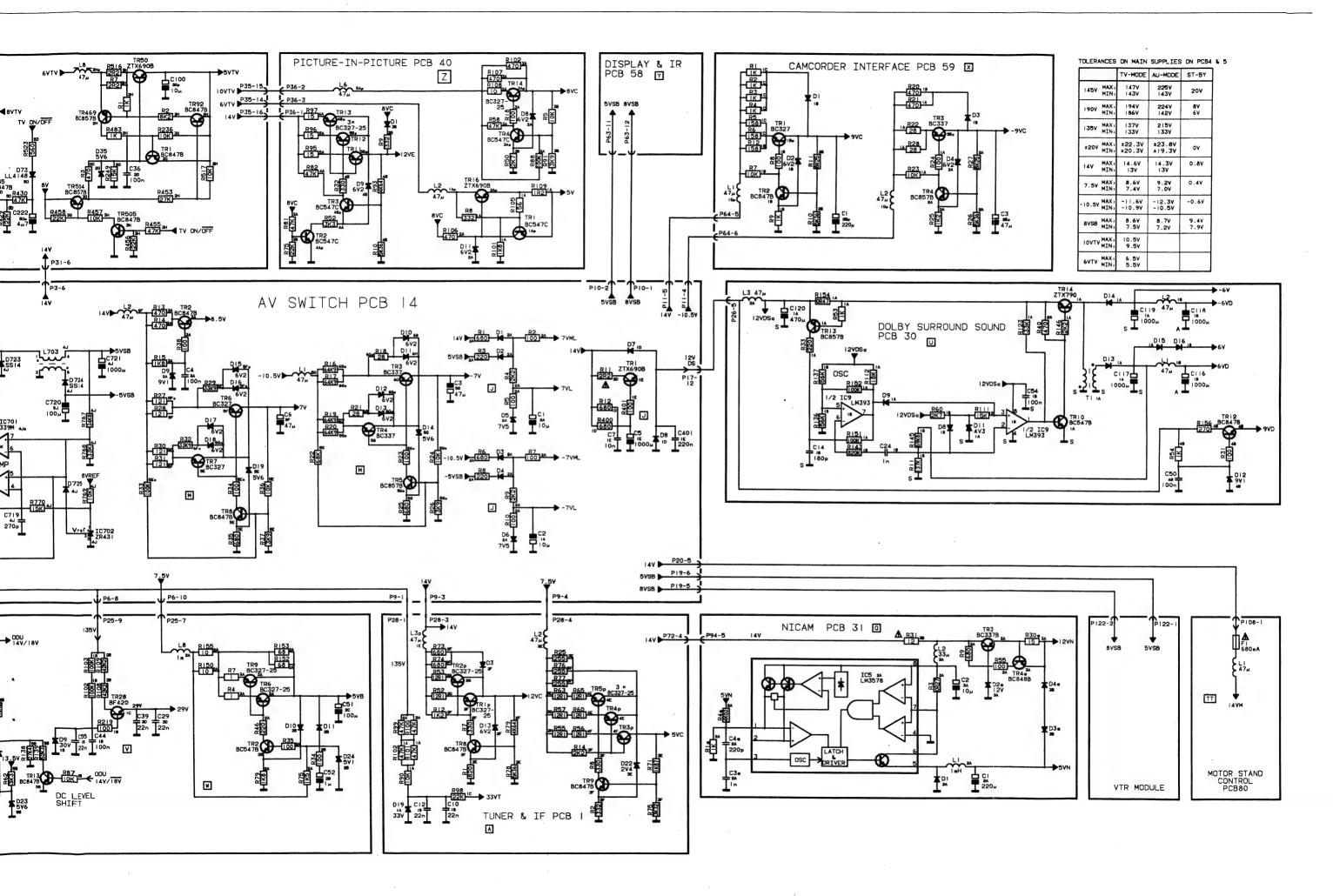


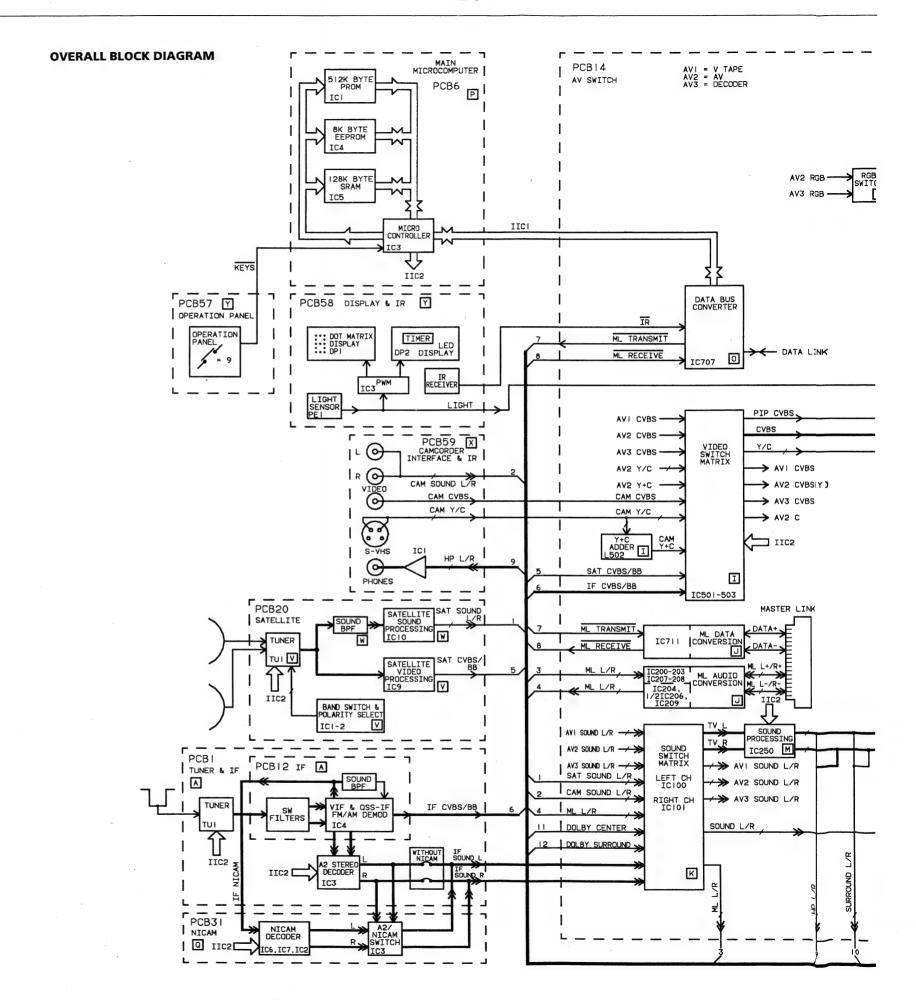
BLOCK DIAGRAM IIC BUS

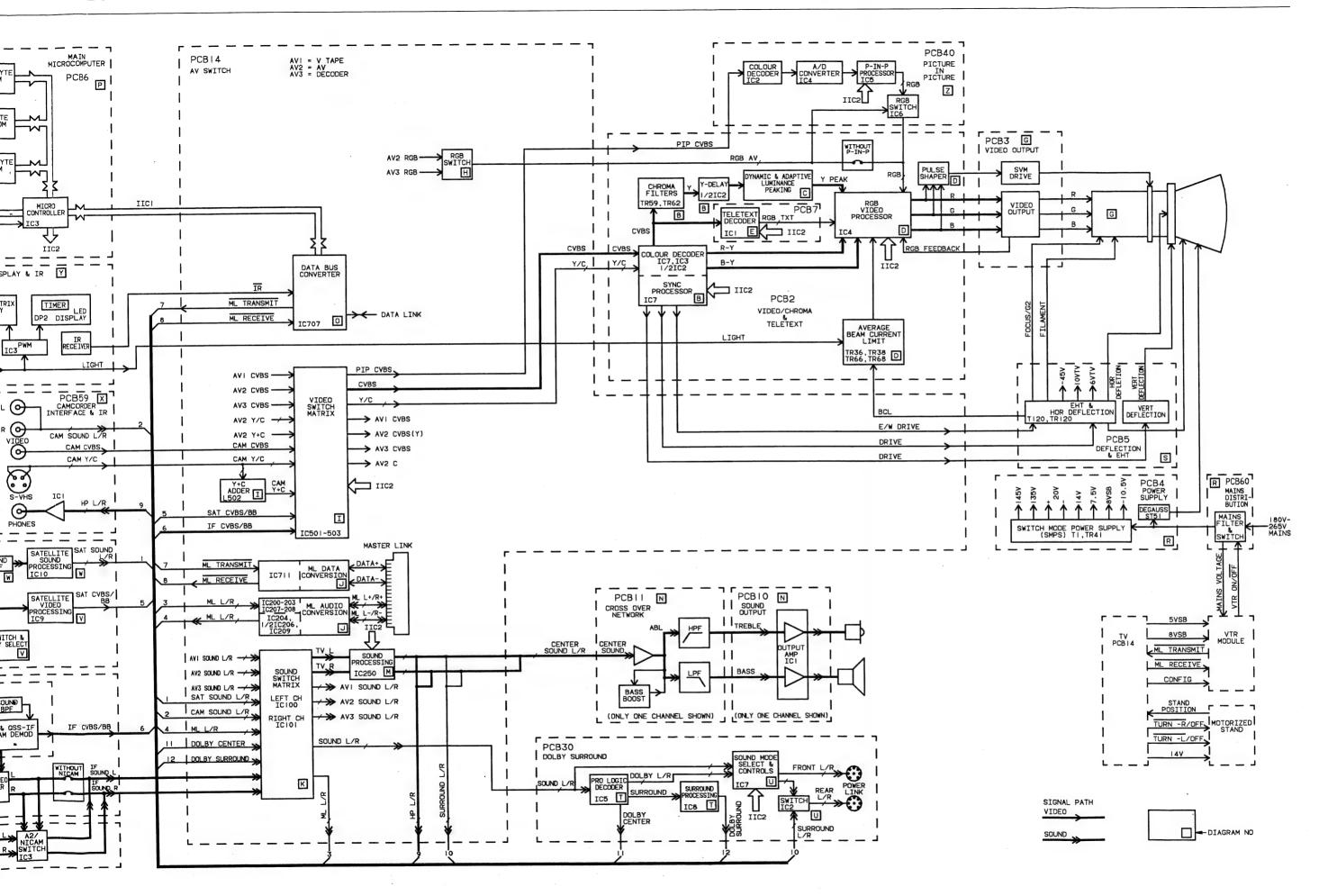


BLOCK DIAGRAM FOR POWER SUPPLIES

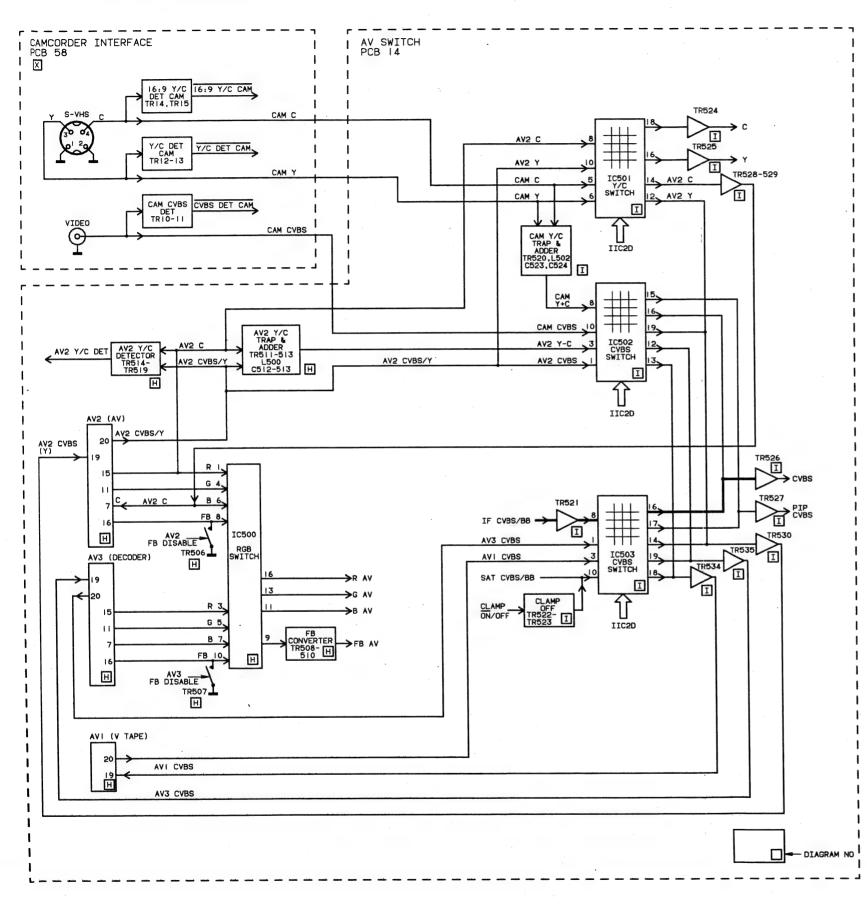




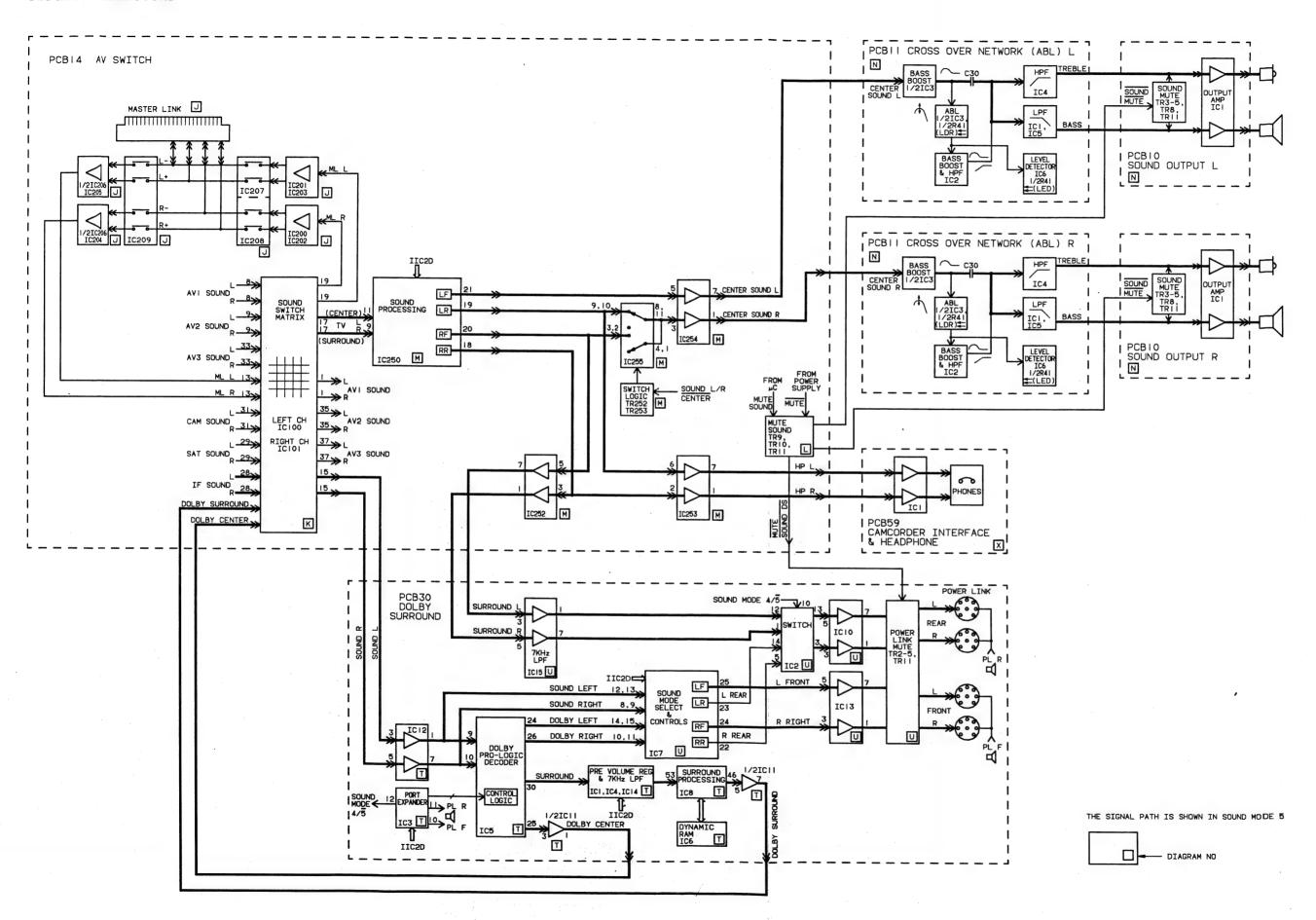




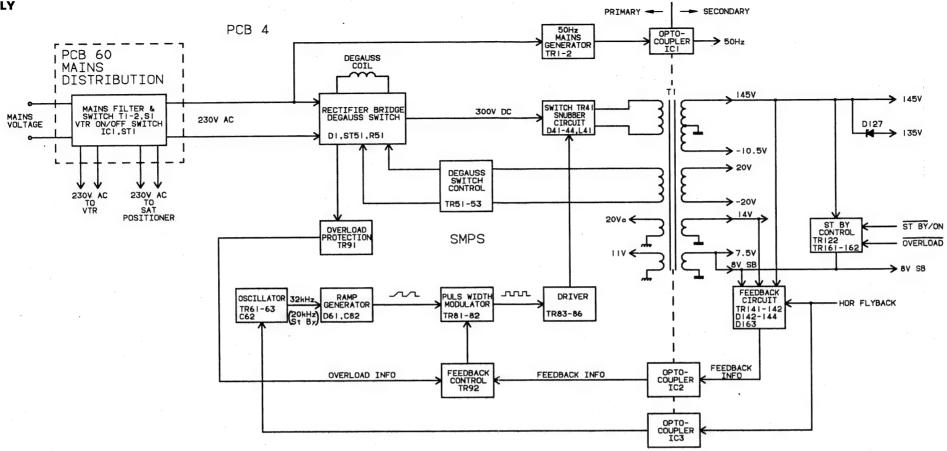
BLOCK DIAGRAM VIDEO SWITCHING



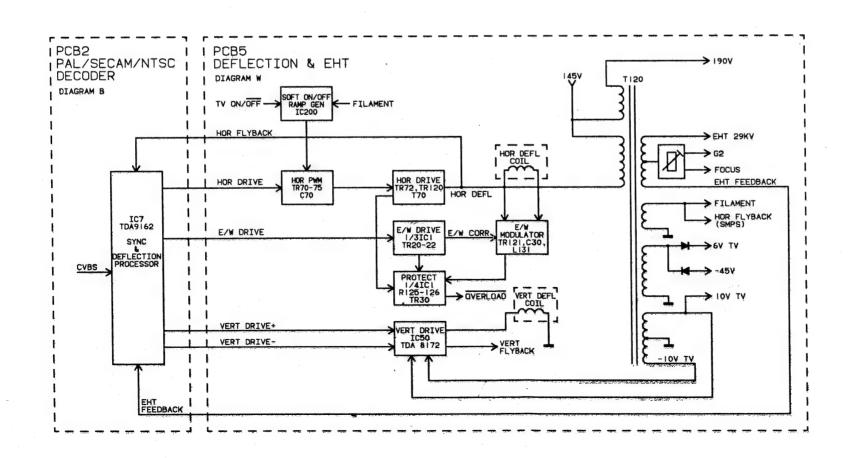
BLOCK DIAGRAM SOUND



BLOCK DIAGRAM POWER SUPPLY



BLOCK DIAGRAM DEFLECTION



BLOCK DIAGRAM PAL/SECAM/NTSC DECODER

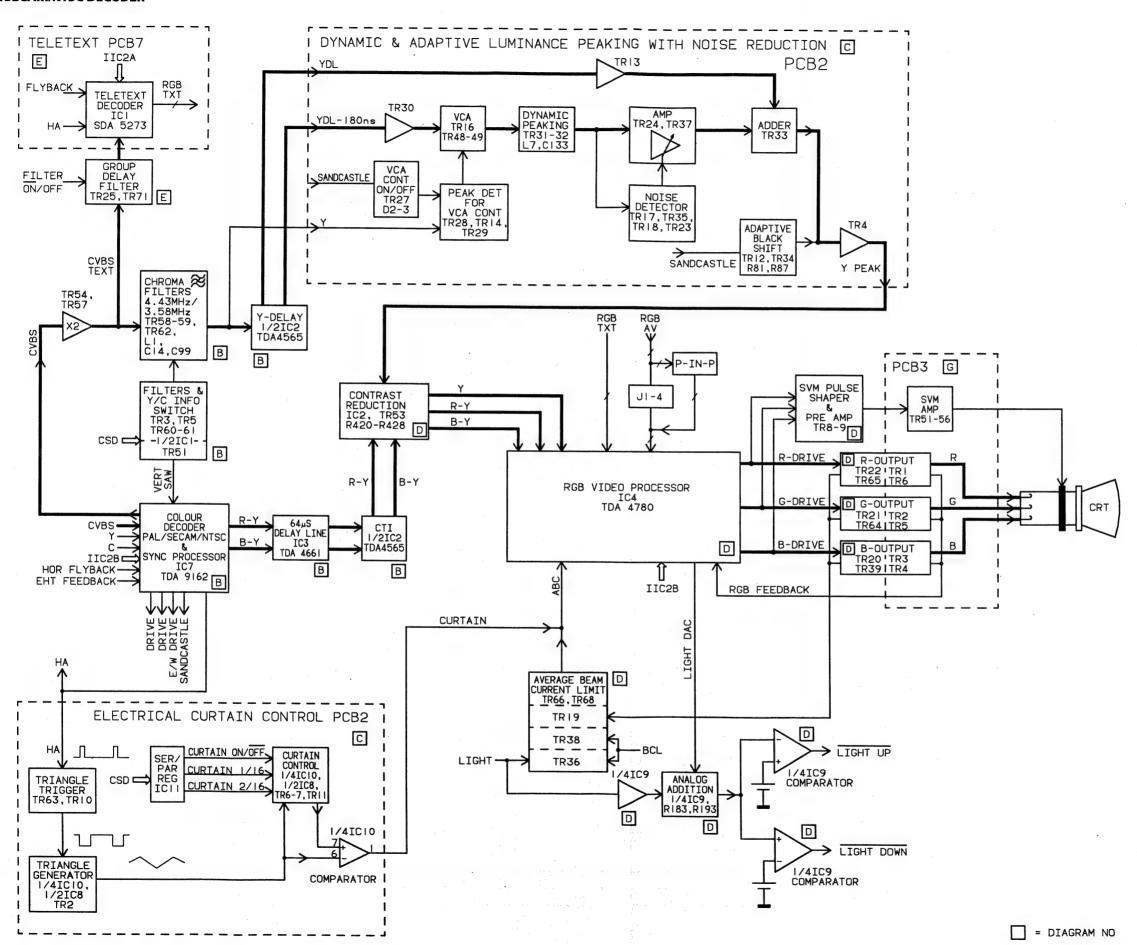


DIAGRAM A TUNER & IF SYSTEM B/G & SYSTEM I PCB drawings for PCB1 & PCB12 see page 2-13

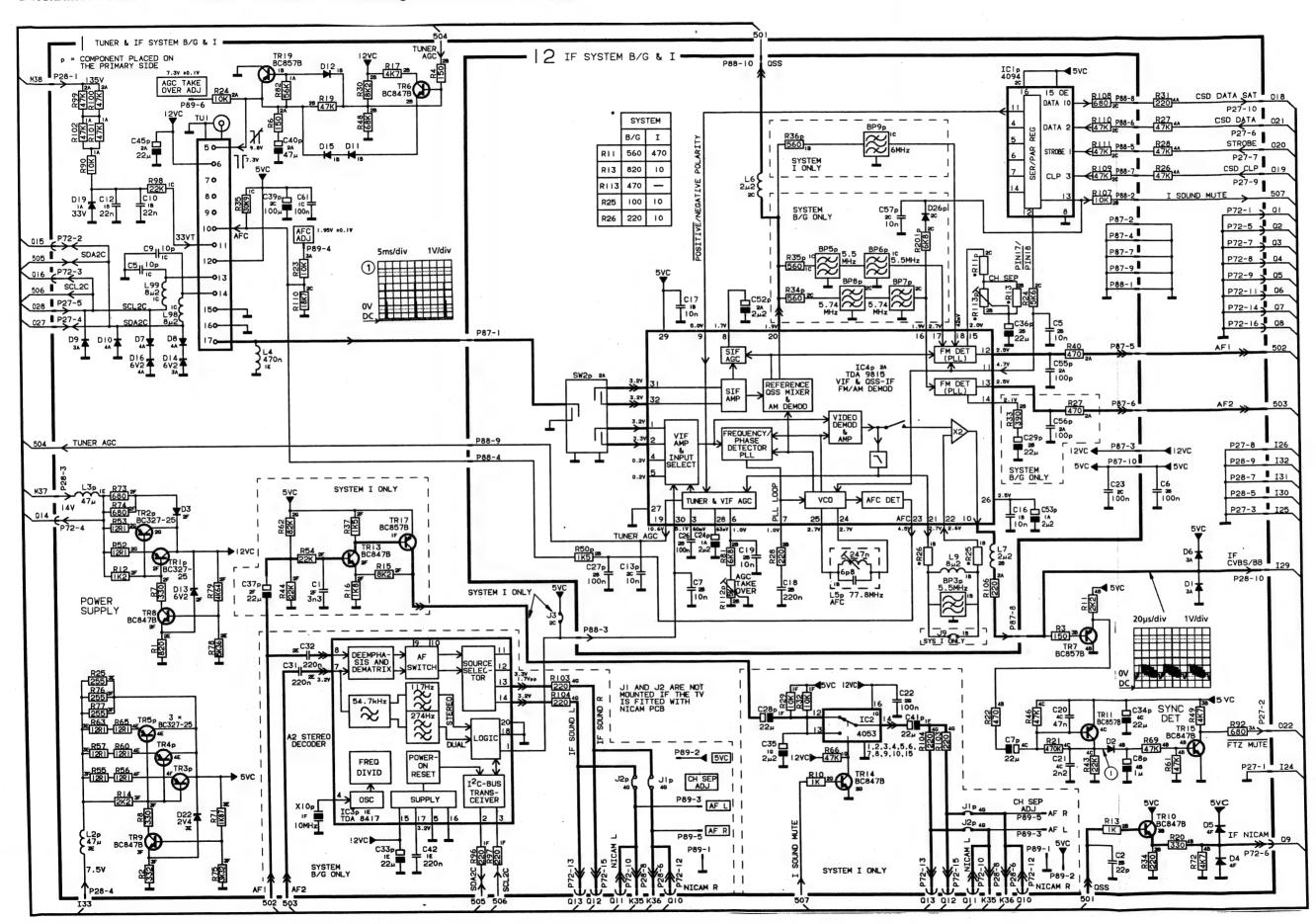


DIAGRAM A TUNER & IF SYSTEM B/G/L/L' & B/G/L/L'/I PCB drawings for PCB1 & PCB12 see page 2-13

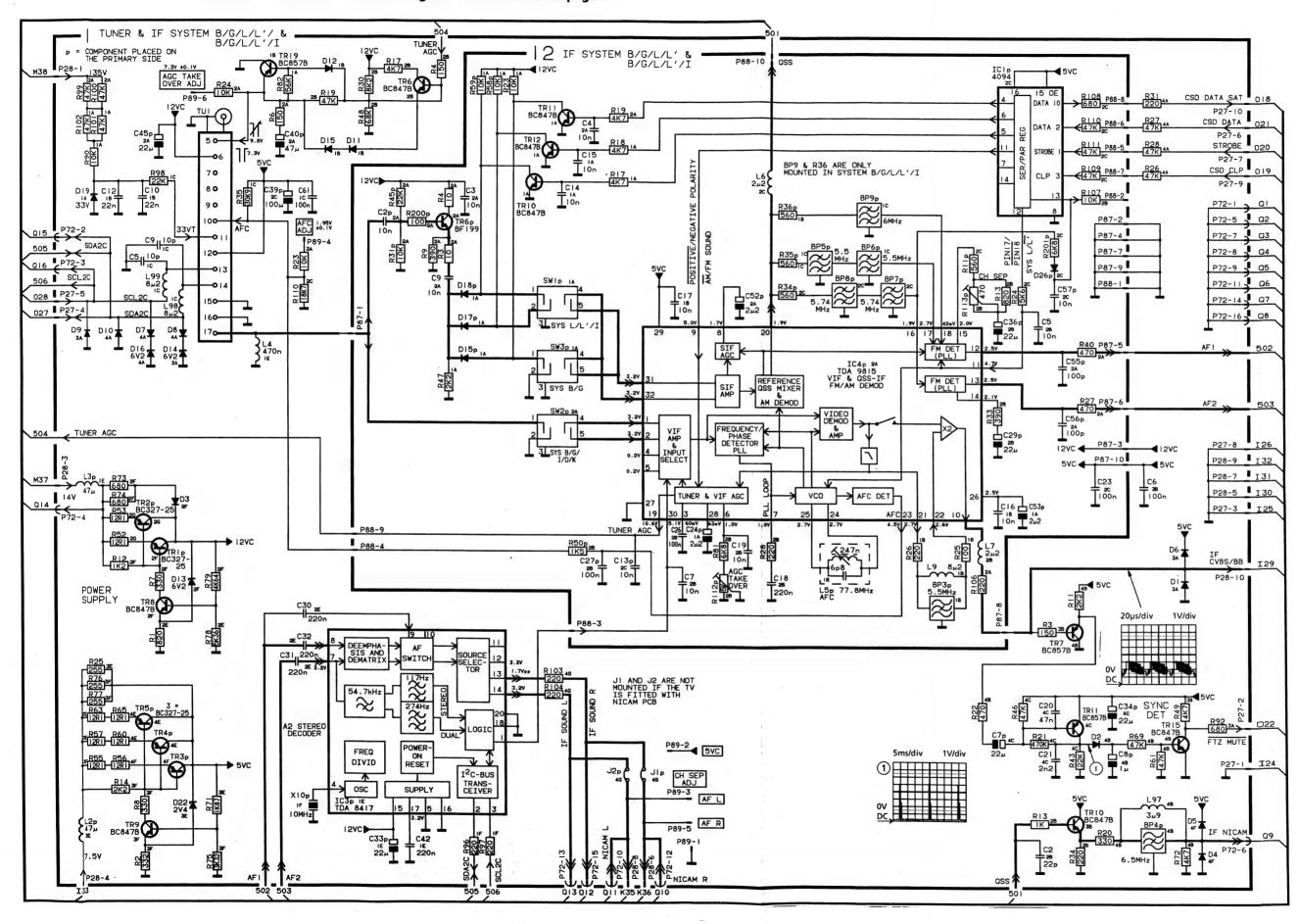
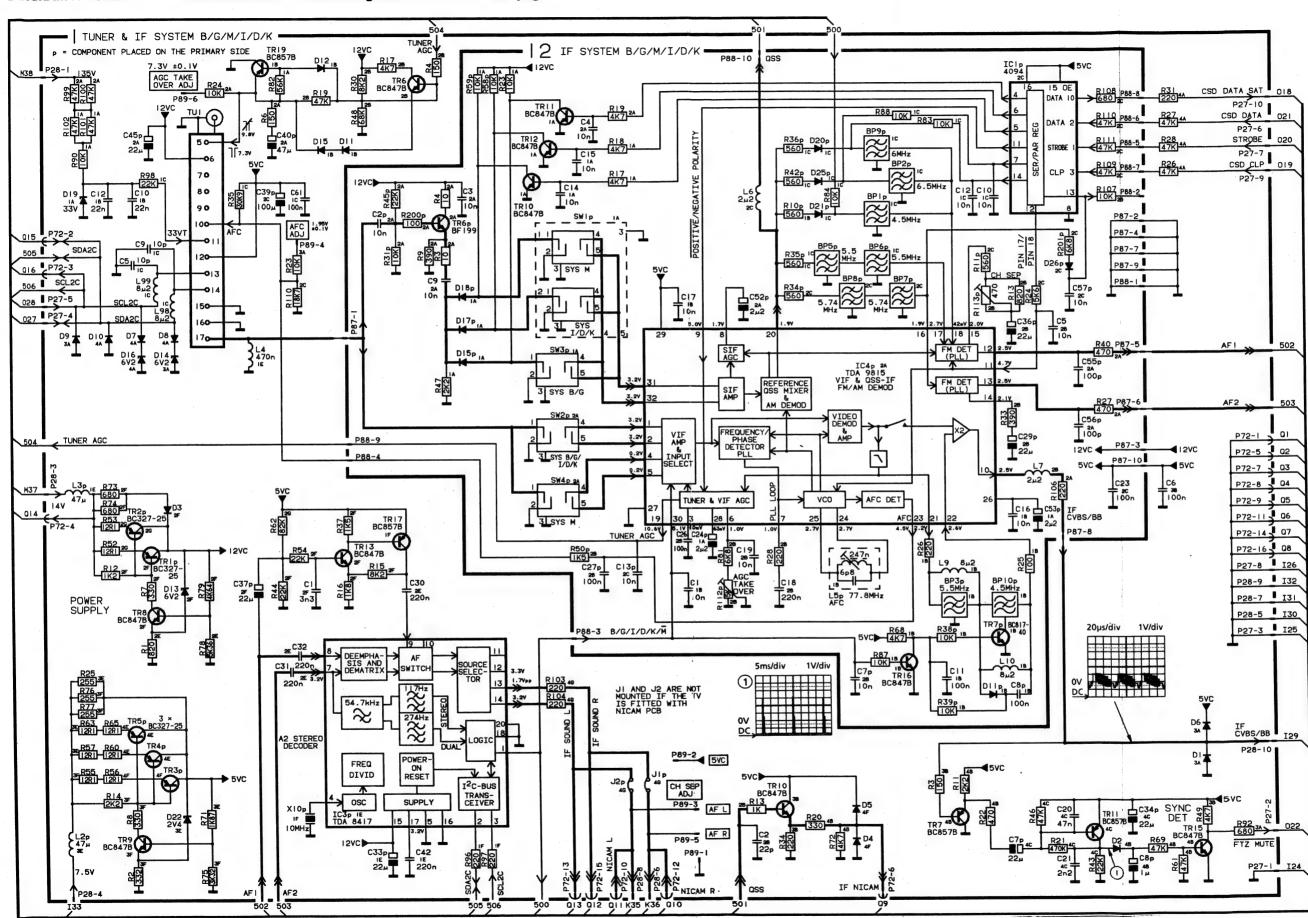
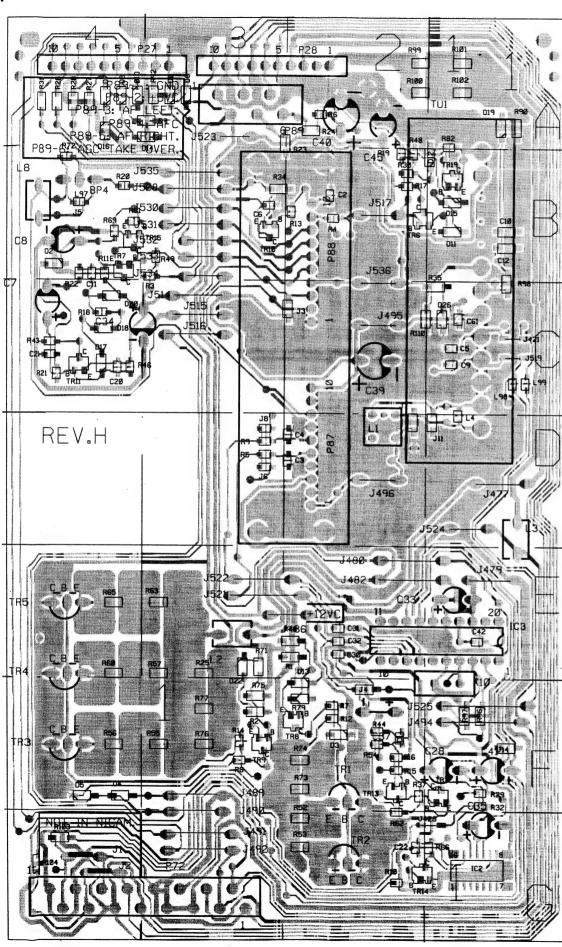


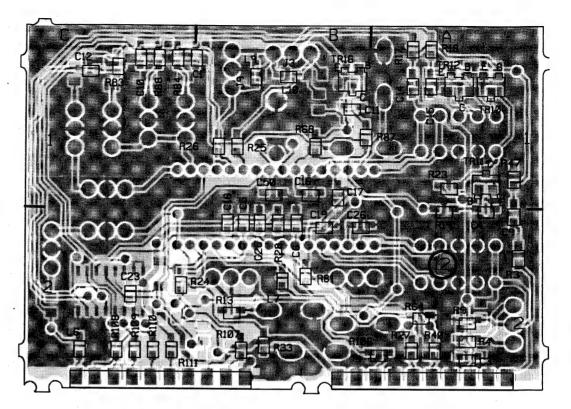
DIAGRAM A TUNER & IF SYSTEM B/G/M/I/D/K PCB drawings for PCB1 & PCB12 see page 2-13



PCB 1



PCB 12



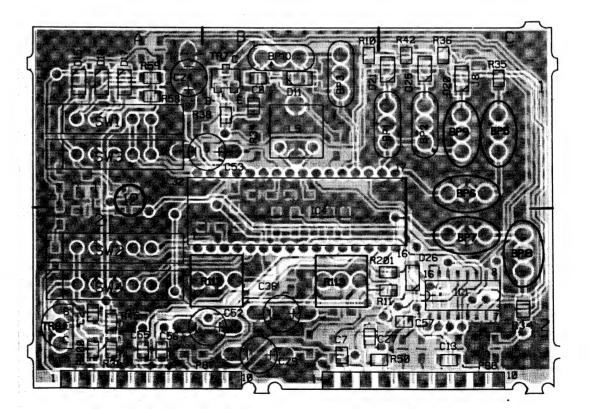
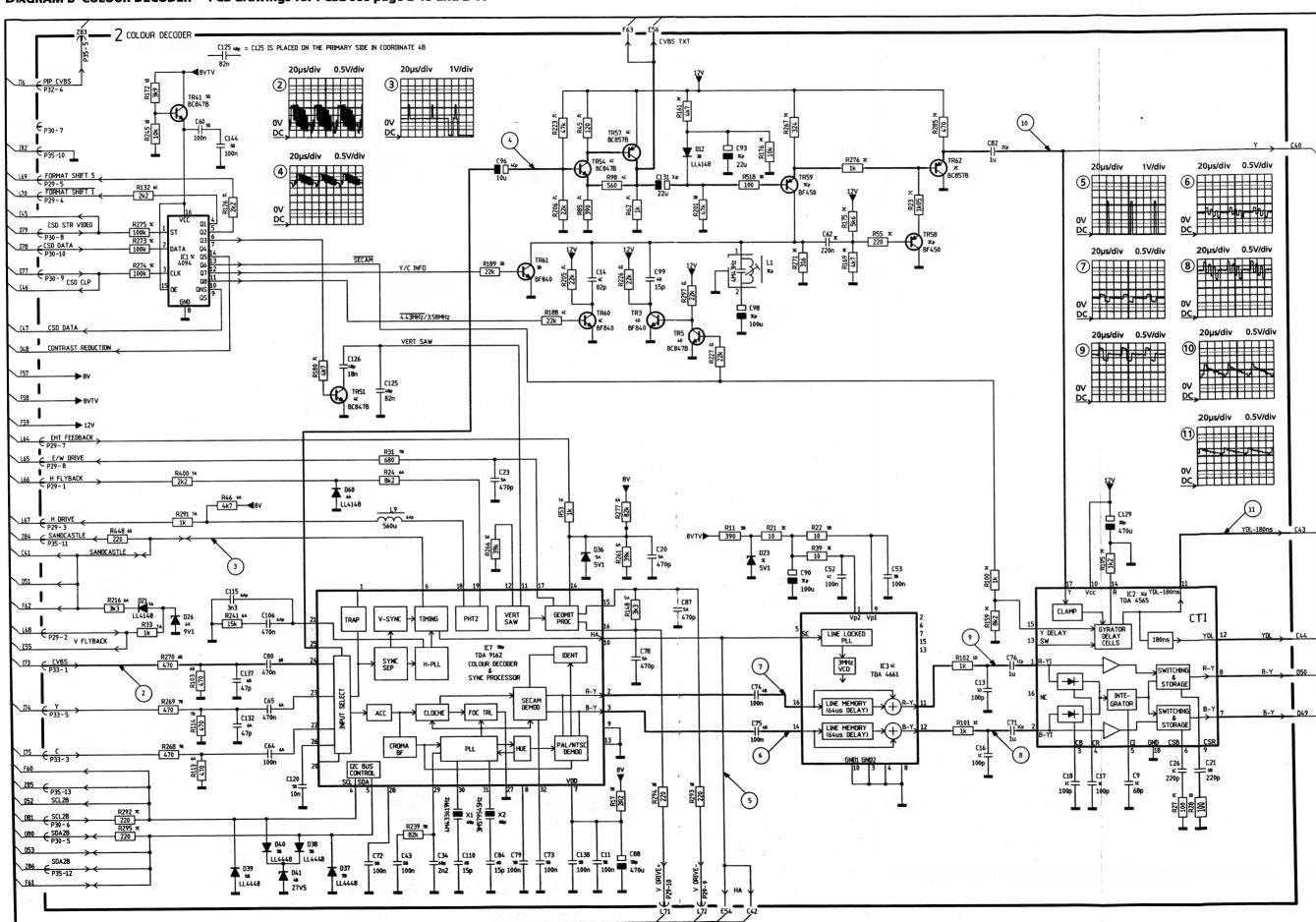
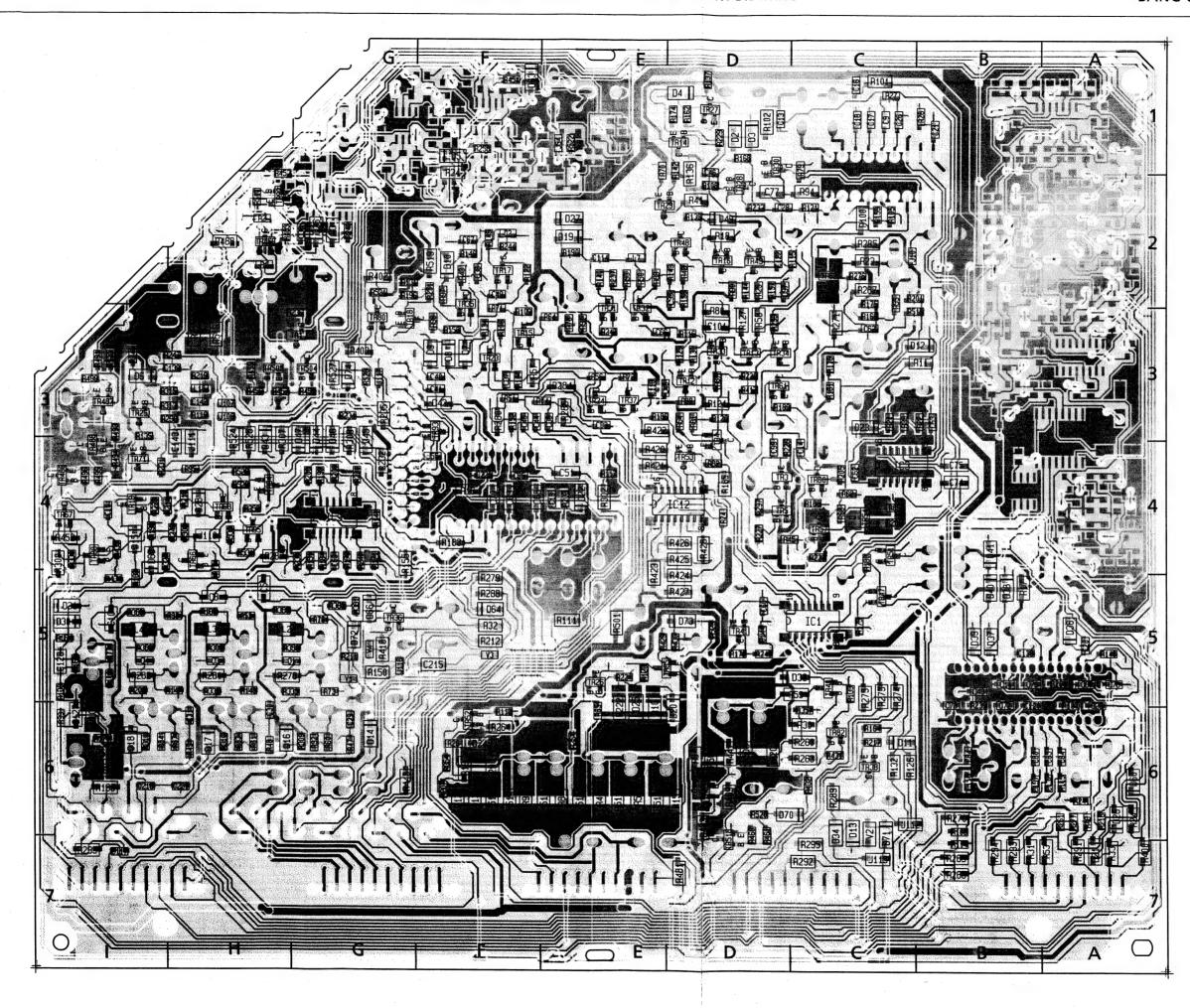


DIAGRAM B COLOUR DECODER PCB drawings for PCB2 see page 2-15 and 2-16



PCB 2



PCB 2

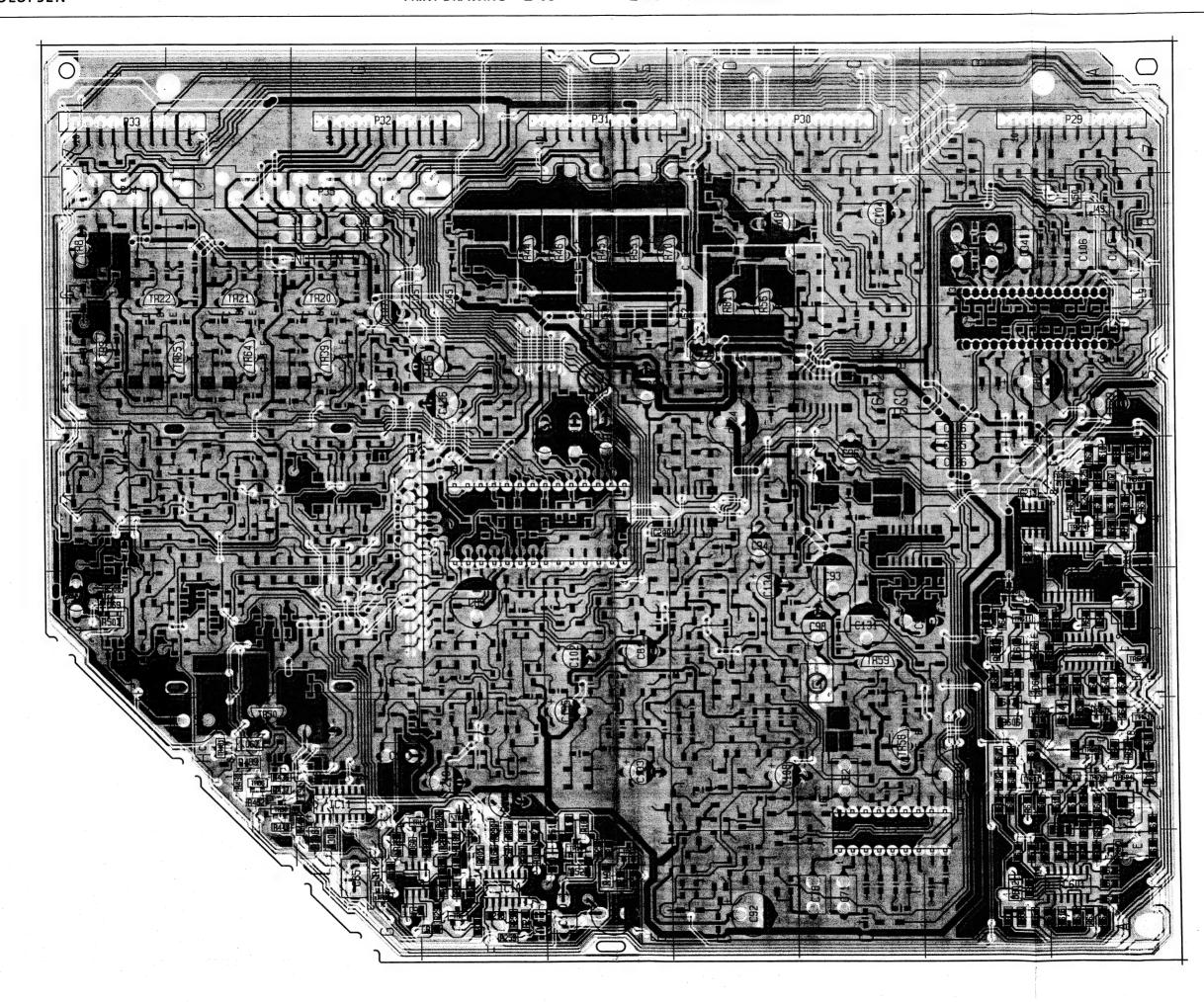


DIAGRAM C LUMINANCE PEAKING & CURTAIN CONTROL PCB drawings for PCB2 see page 2-15 and 2-16

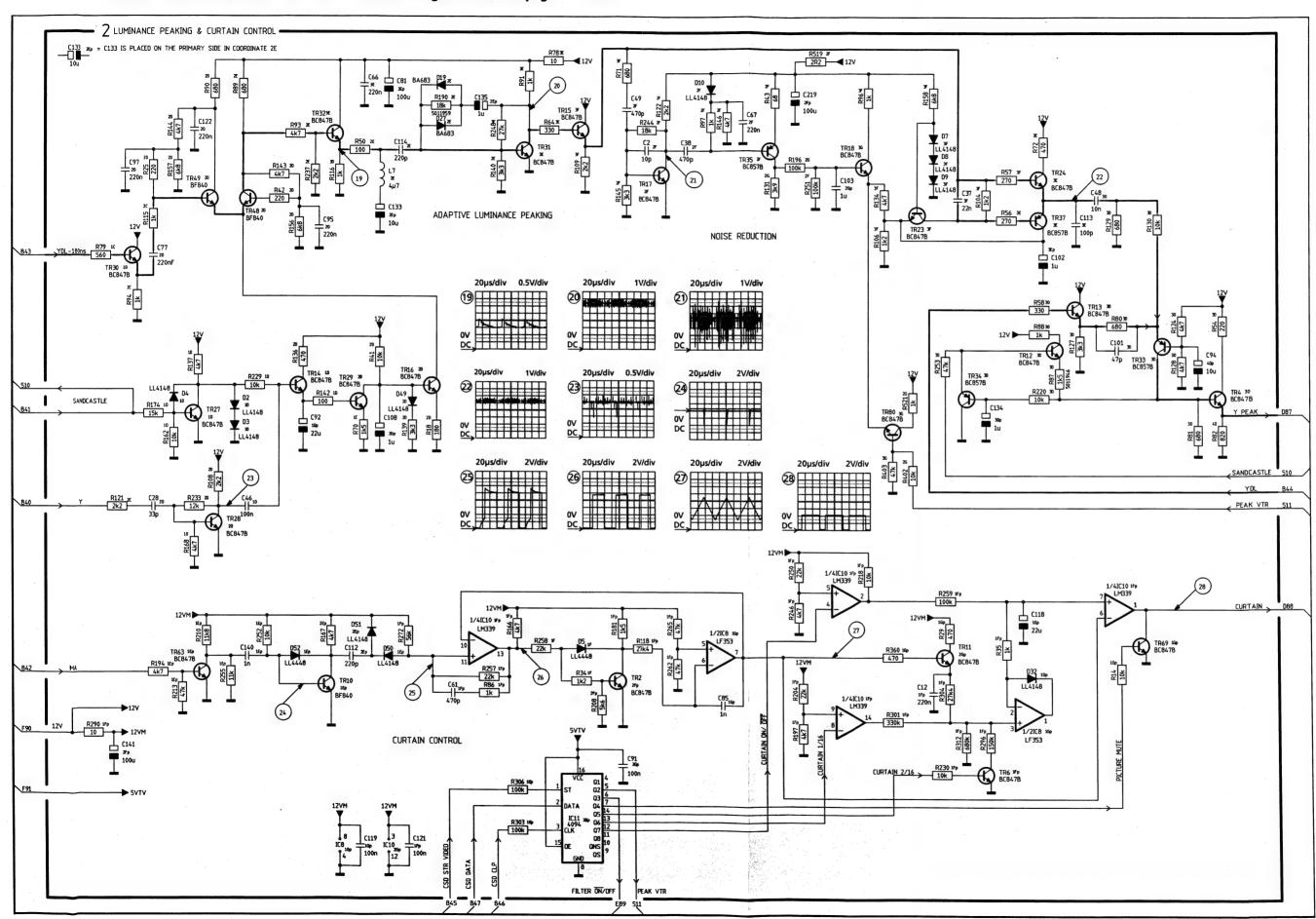


DIAGRAM D VIDEO PROCESSOR PCB drawings for PCB2 see page 2-15 and 2-16

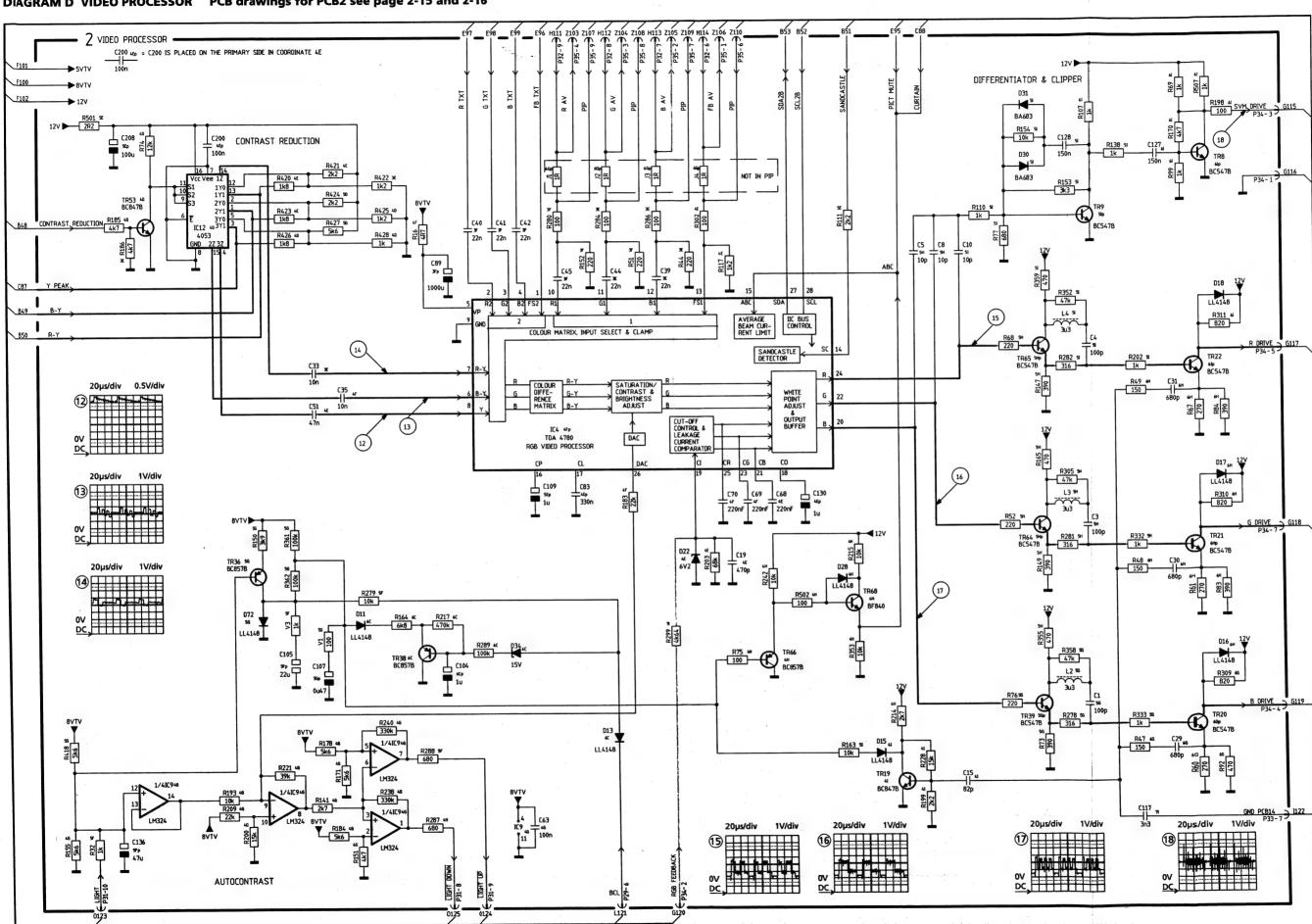


DIAGRAM E TELETEXT PCB drawings for PCB2 see page 2-15 and 2-16

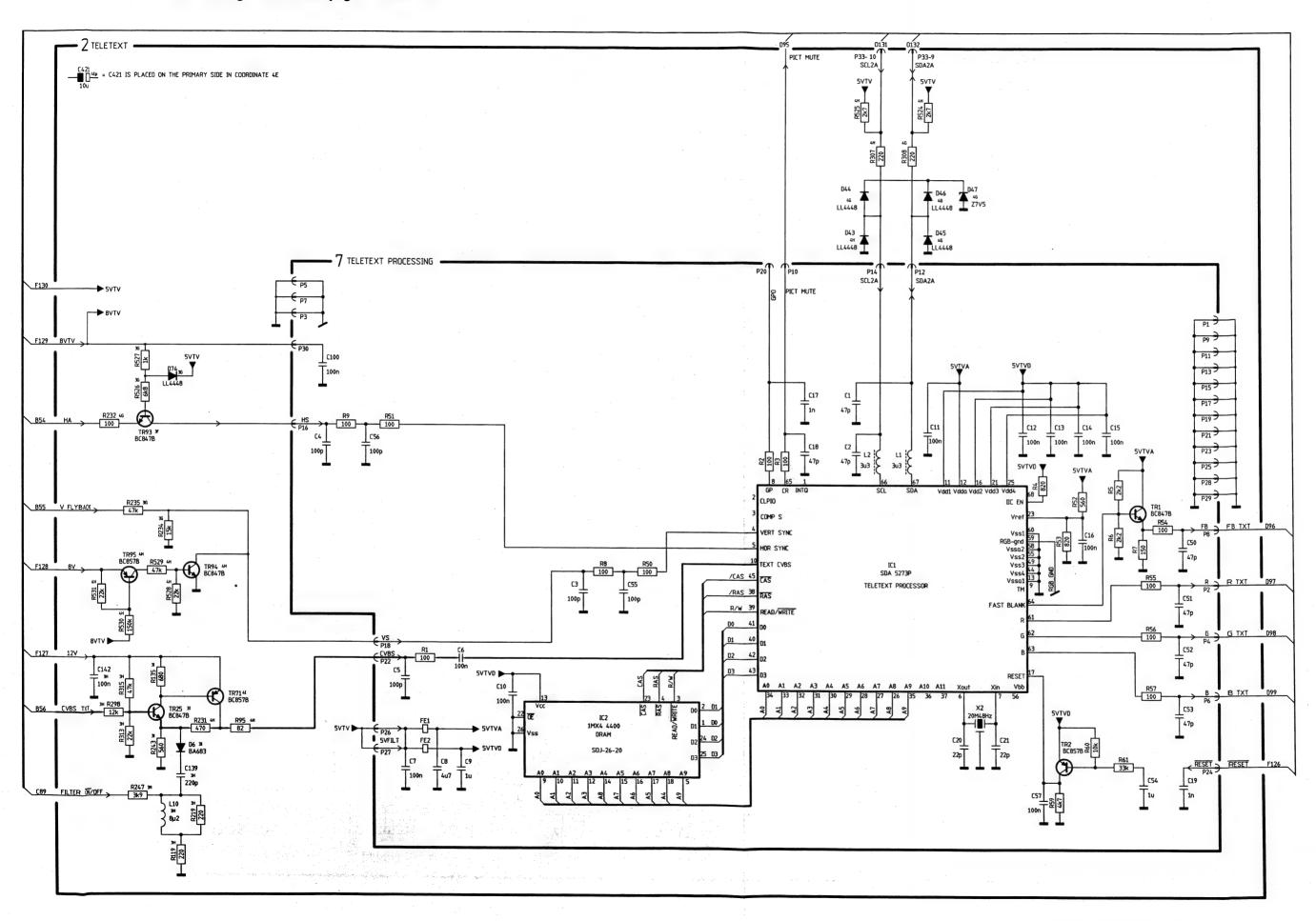


DIAGRAM F POWER SUPPLY & FORMAT OPTIMIZE PCB drawings for PCB2 see page 2-15 and 2-16

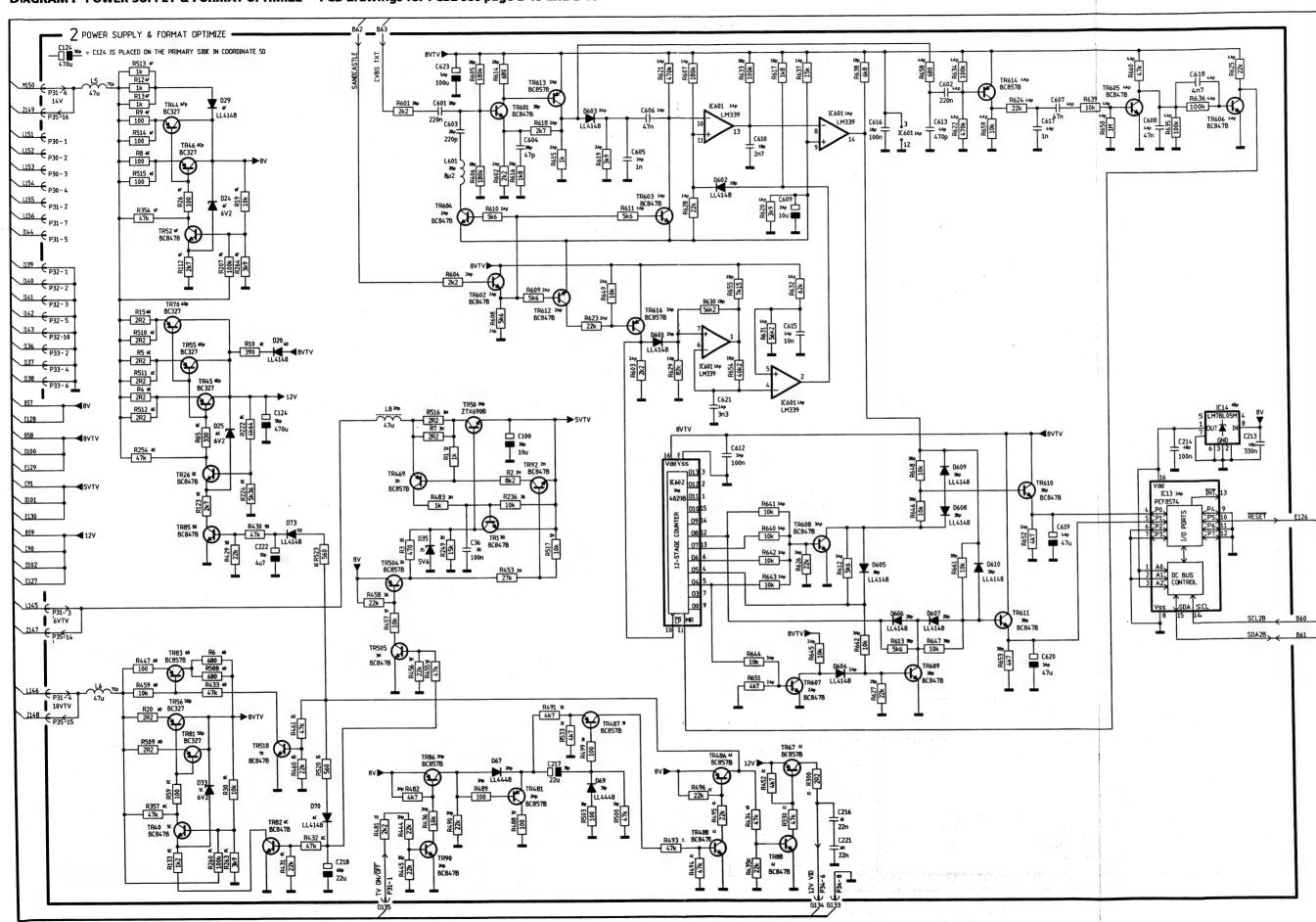
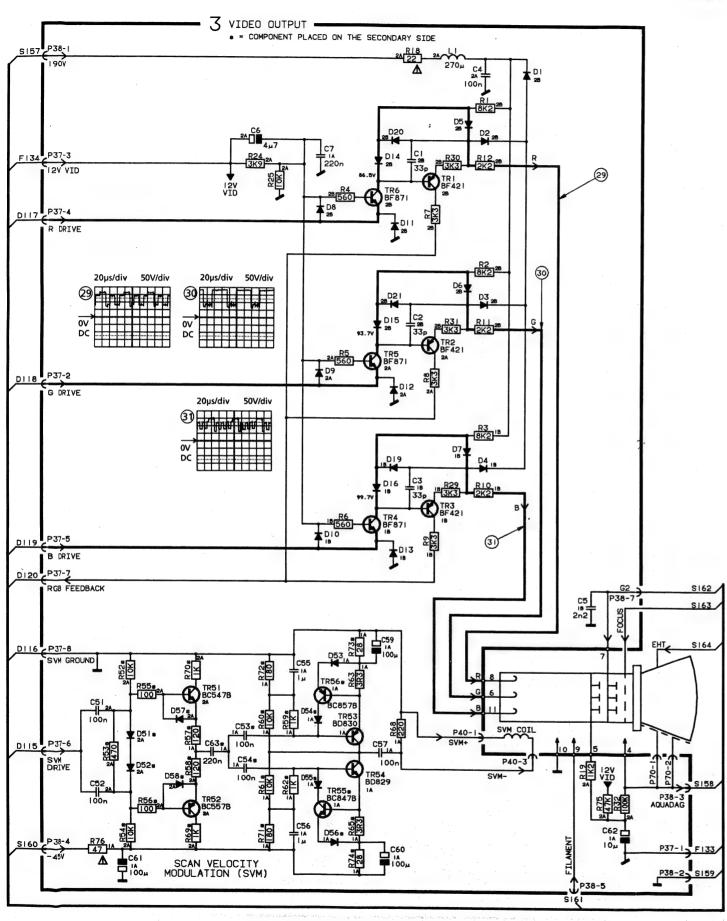


DIAGRAM G VIDEO OUTPUT



PCB 3

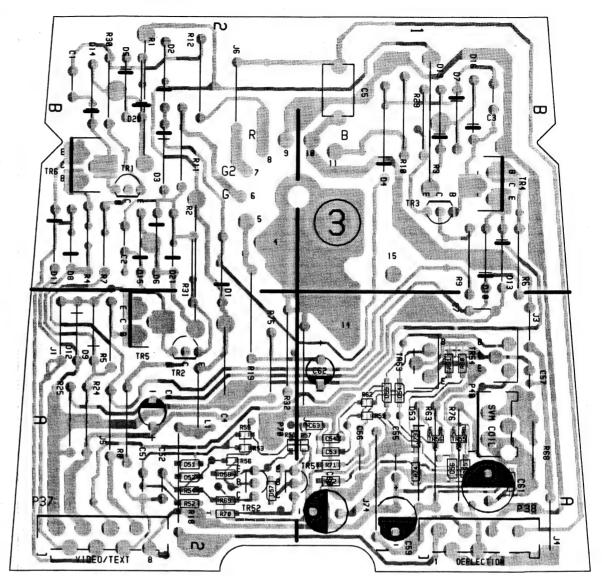


DIAGRAM H AV SOCKETS PCB drawings for PCB14 see page 2-27 and 2-28

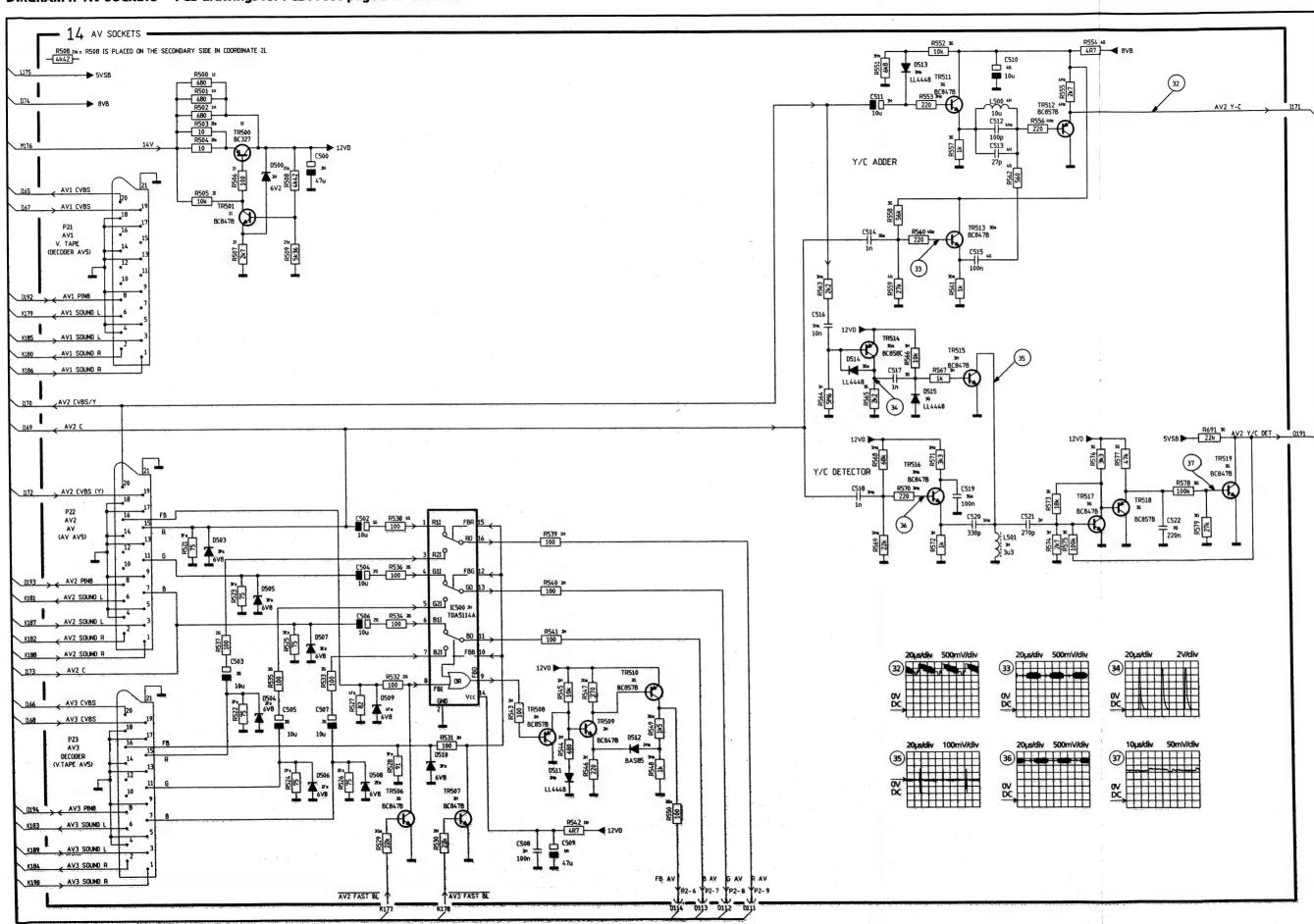


DIAGRAM | VIDEO SWITCHING PCB drawings for PCB14 see page 2-27 and 2-28

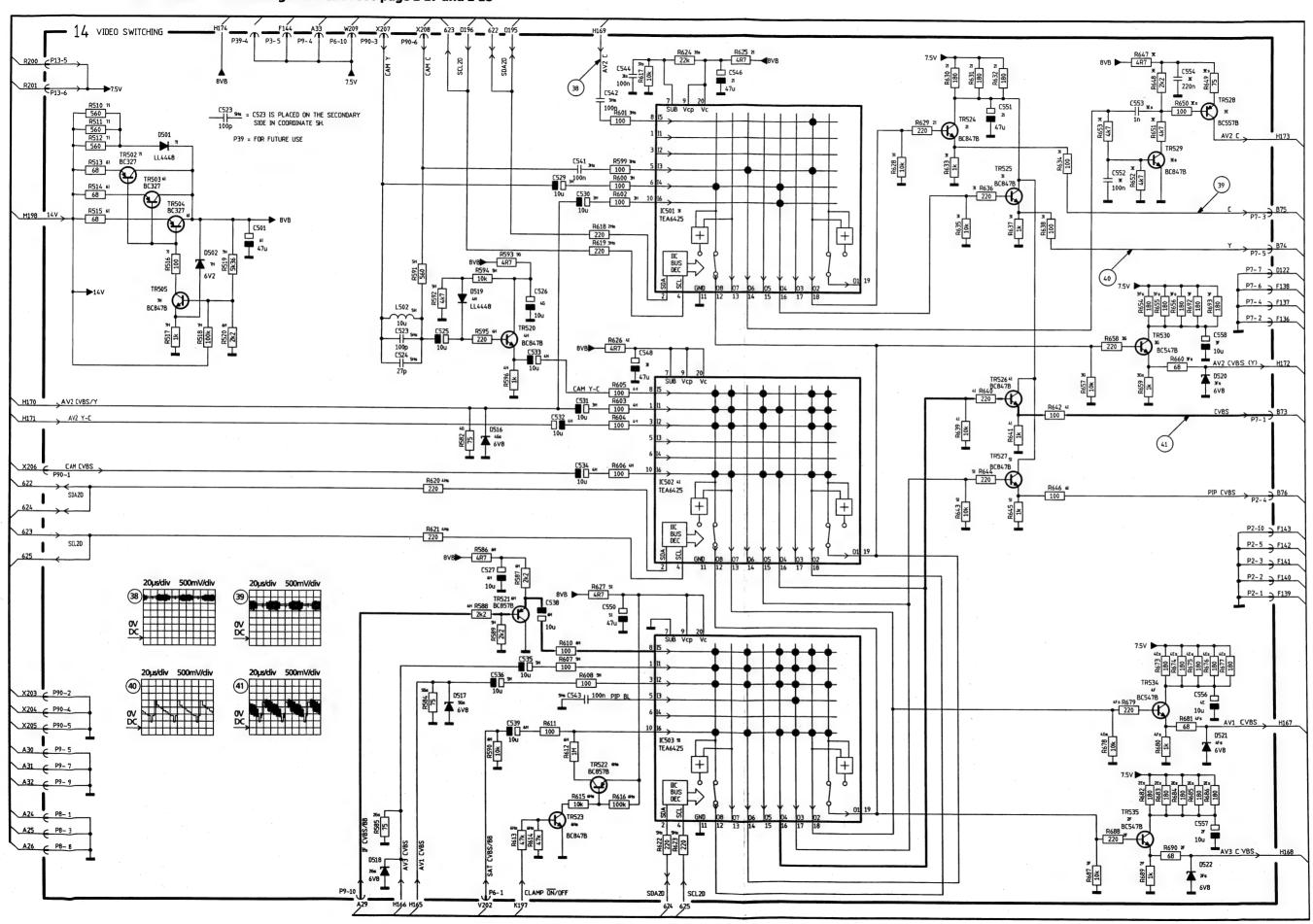


DIAGRAM J MASTER LINK PCB drawings for PCB14 see page 2-27 and 2-28

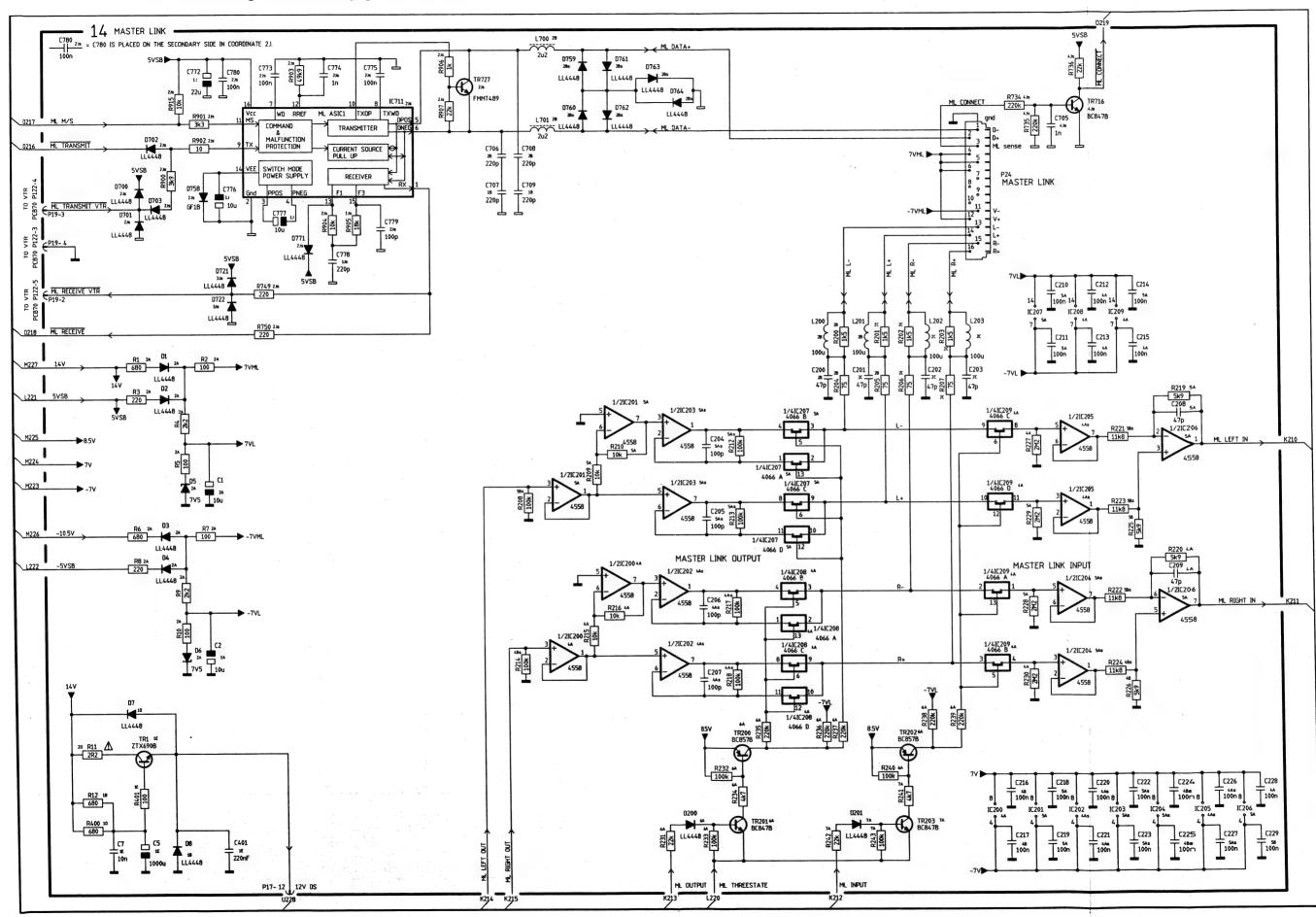


DIAGRAM K SOUND SWITCHING PCB drawings for PCB14 see page 2-27 and 2-28

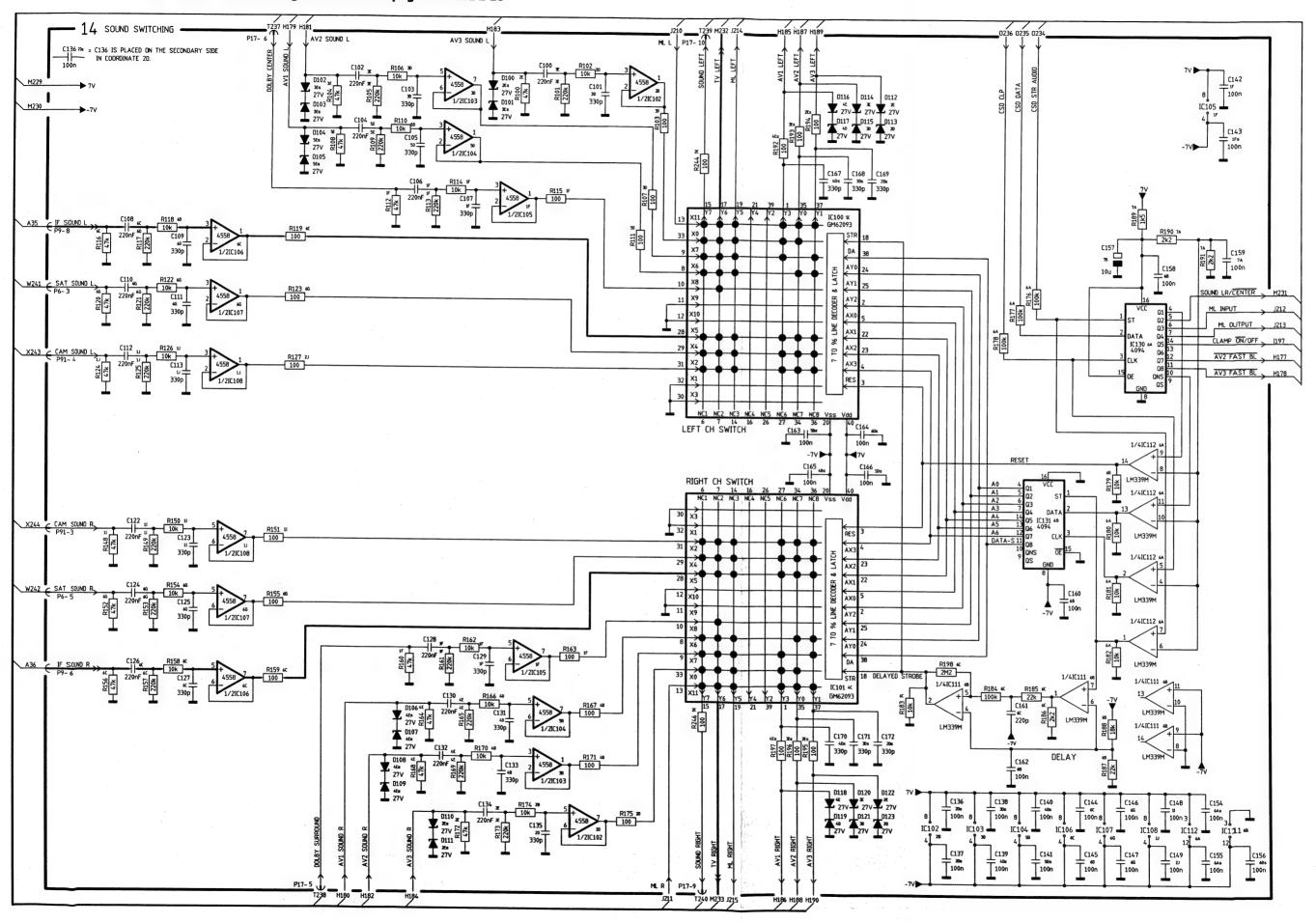
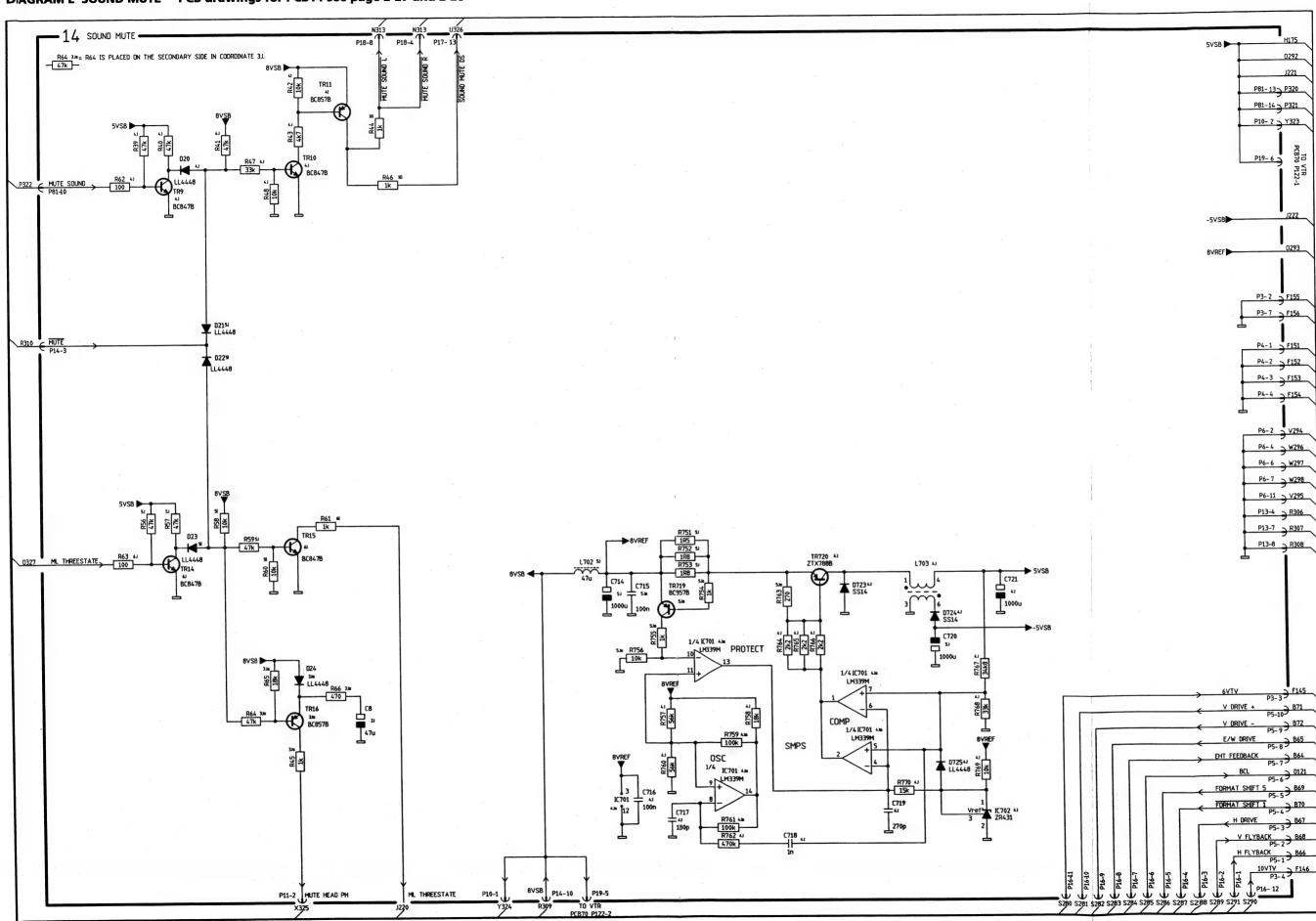
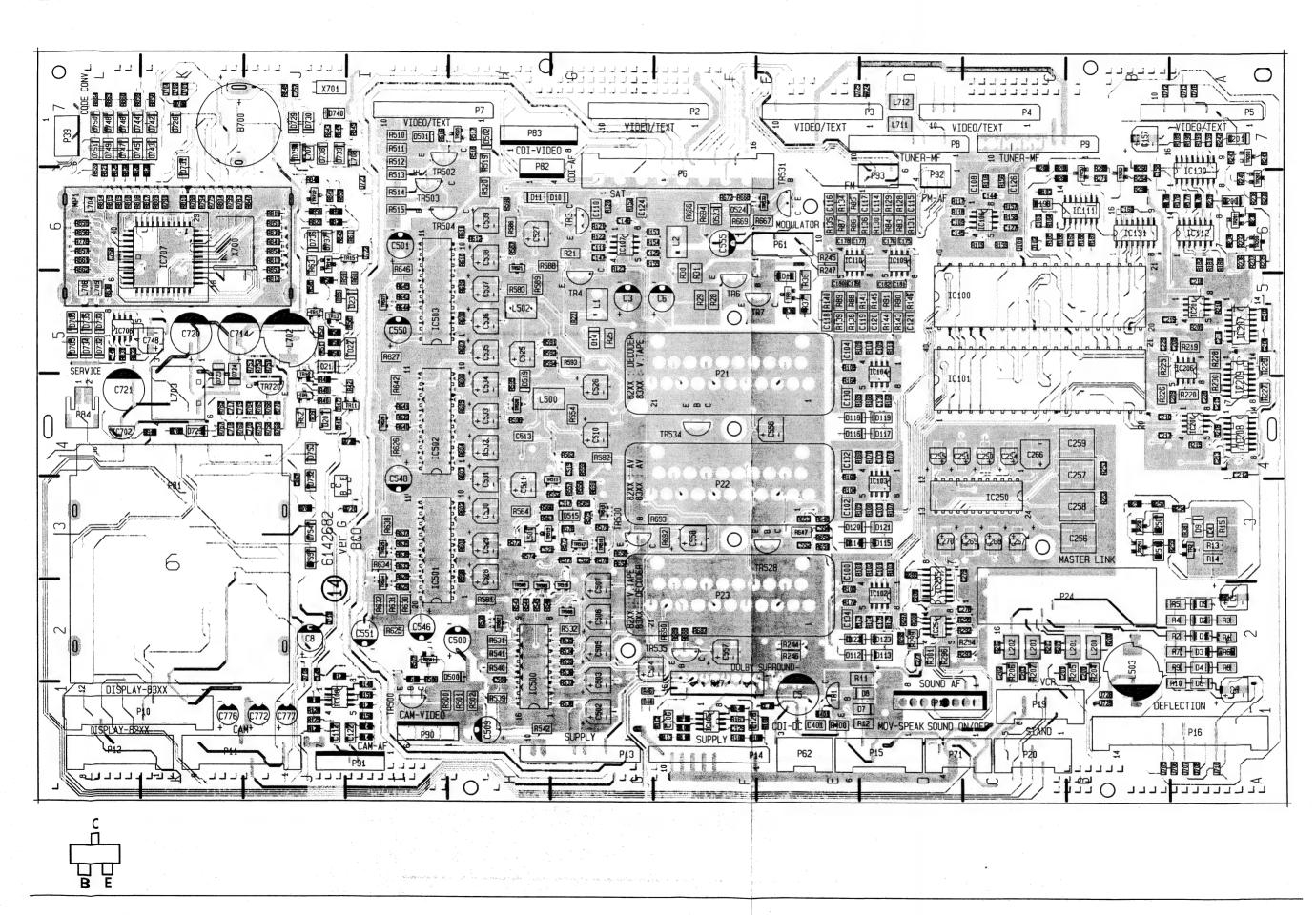


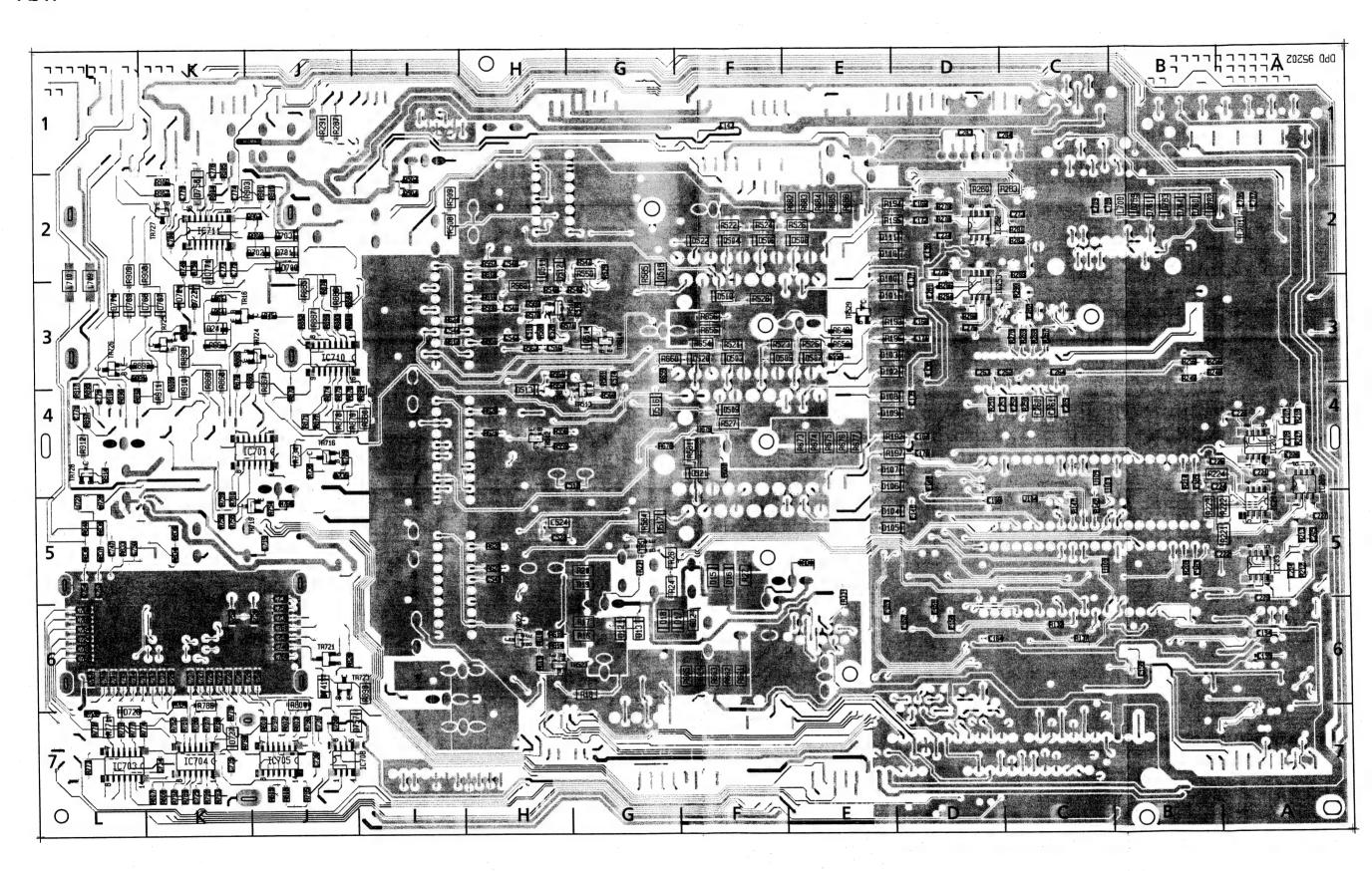
DIAGRAM L SOUND MUTE PCB drawings for PCB14 see page 2-27 and 2-28



PCB 14

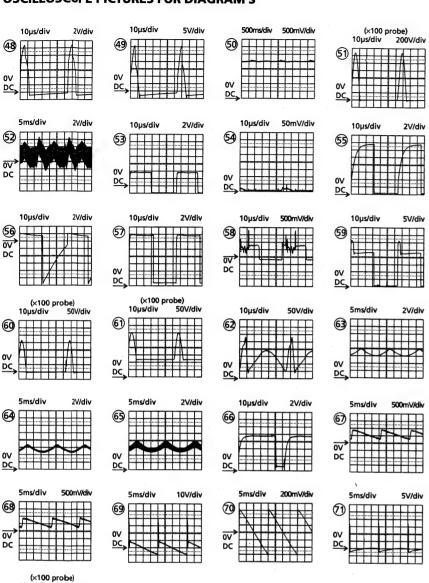


PCB 14

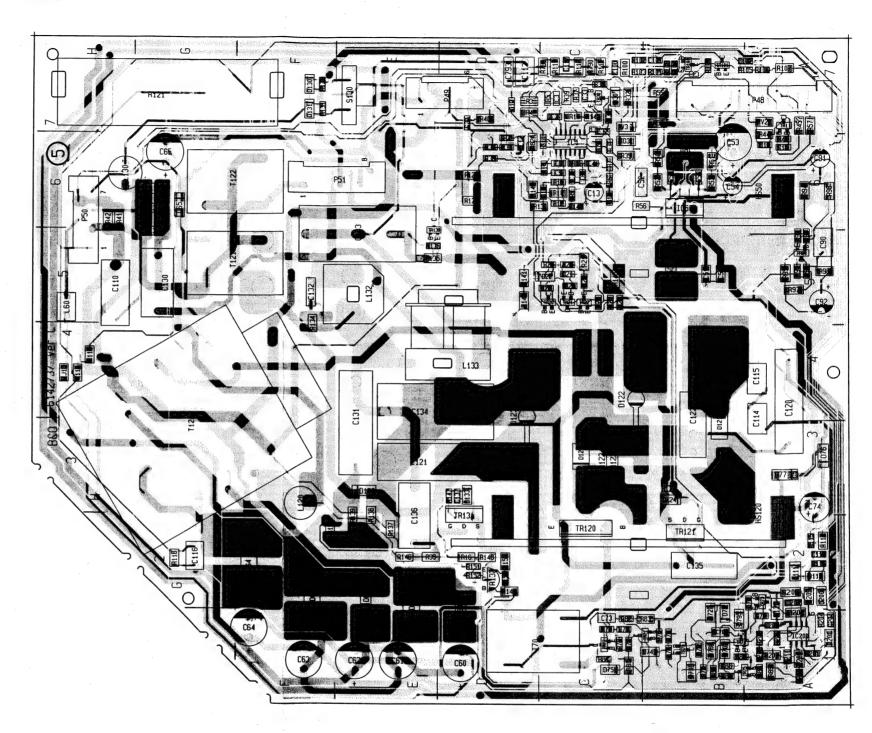


EST

OSCILLOSCOPE PICTURES FOR DIAGRAM S



PCB 5



OSCILLOSCOPE PICTURES FOR DIAGRAM R

10us/div 200V/div

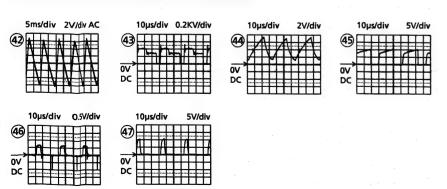


DIAGRAM M SOUND CONTROL PCB drawings for PCB14 see page 2-27 and 2-28

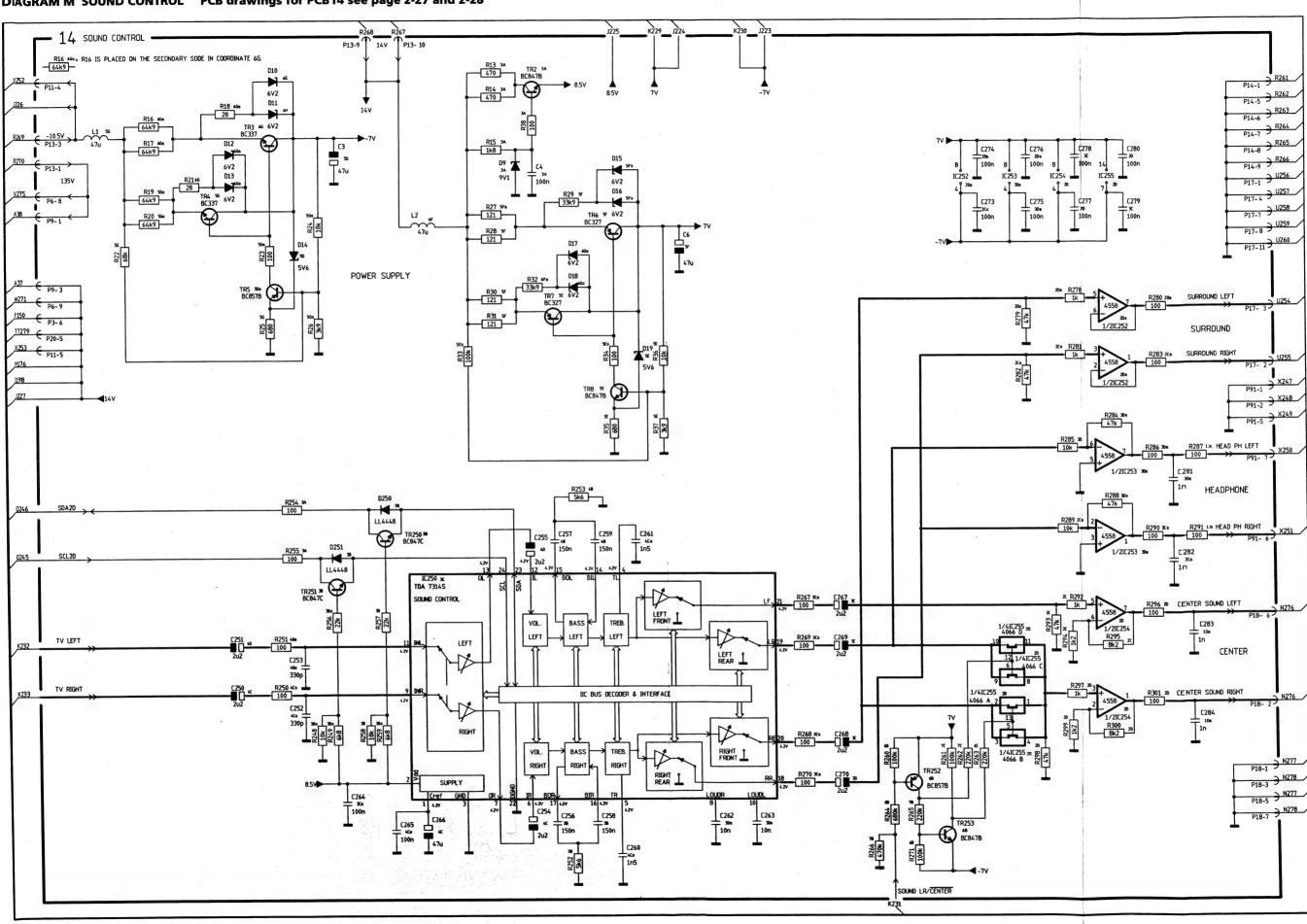
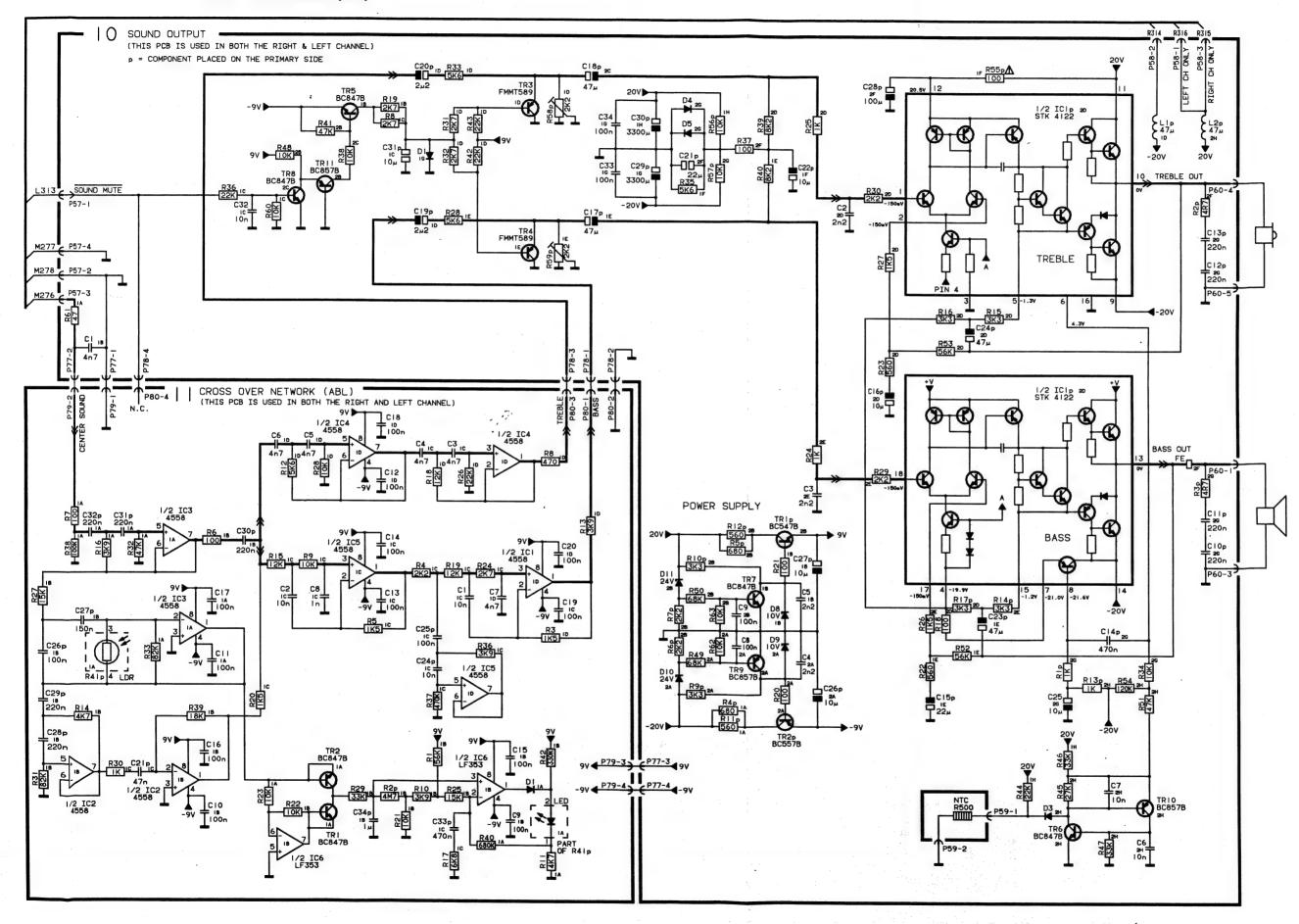
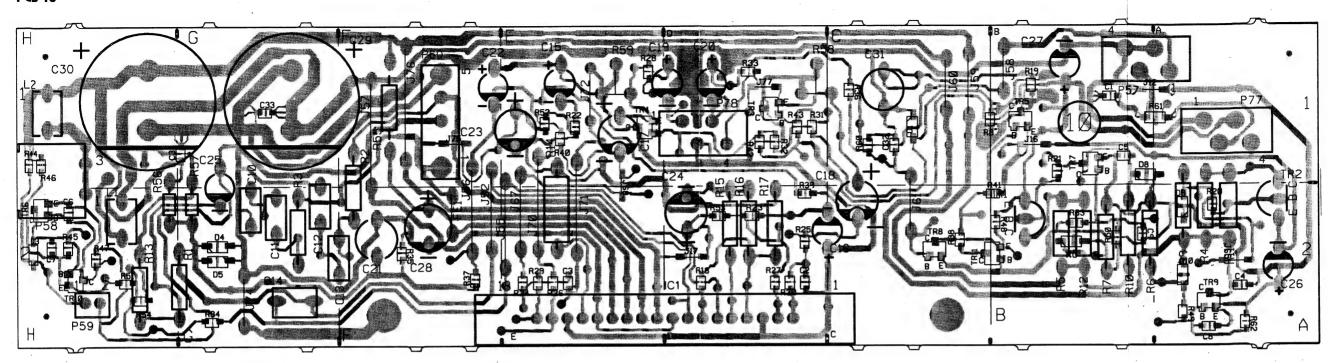


DIAGRAM N SOUND OUTPUT & CROSS OVER NETWORK (ABL)



PCB 10



PCB 11

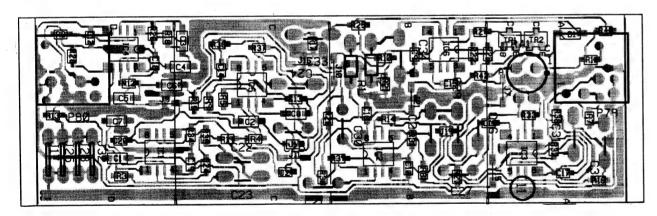
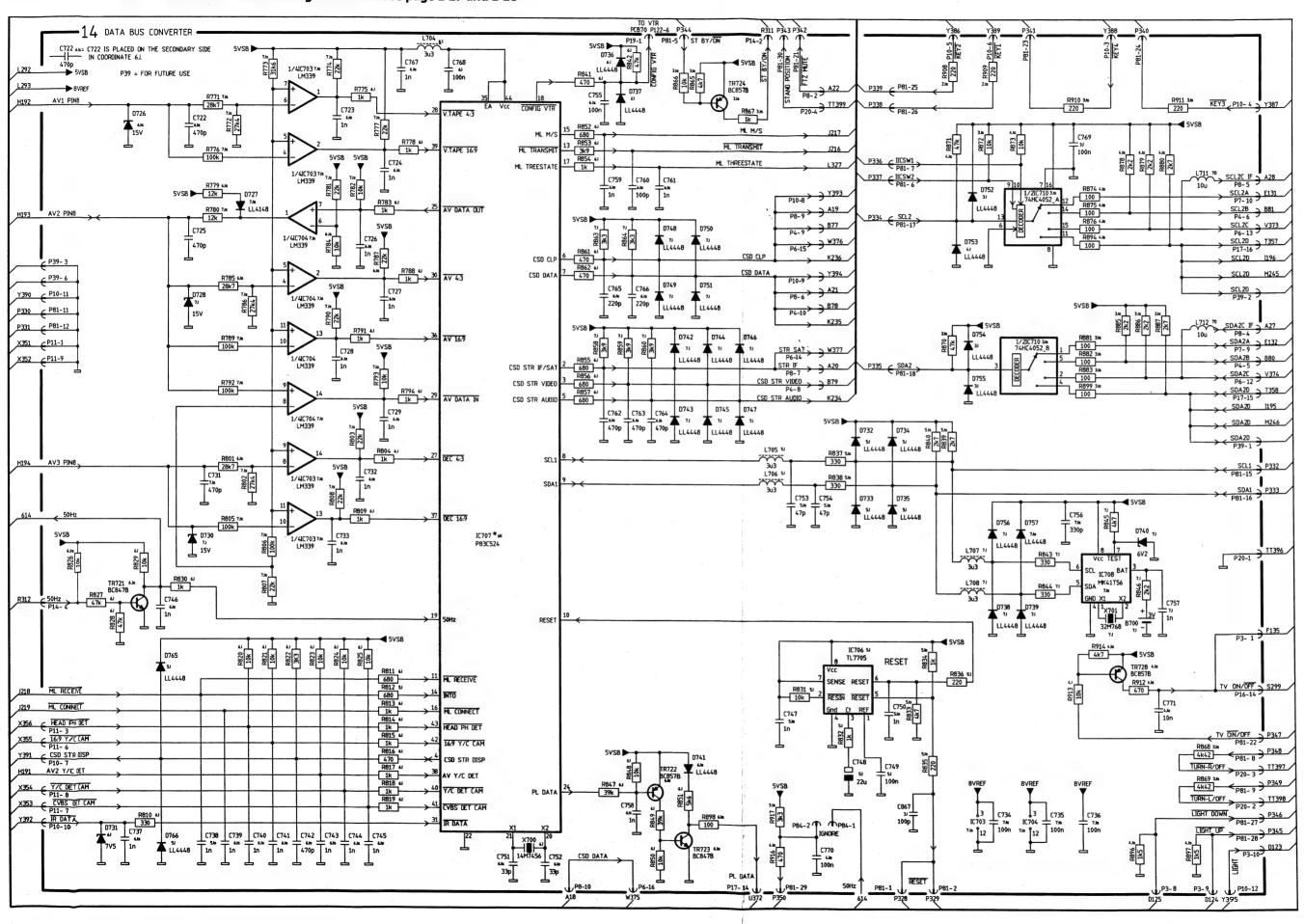


DIAGRAM O DATA BUS CONVERTER PCB drawings for PCB14 see page 2-27 and 2-28



2-34 DIAGRAM P

DIAGRAM P MAIN MICROCOMPUTER

BANG & OLUFSEN

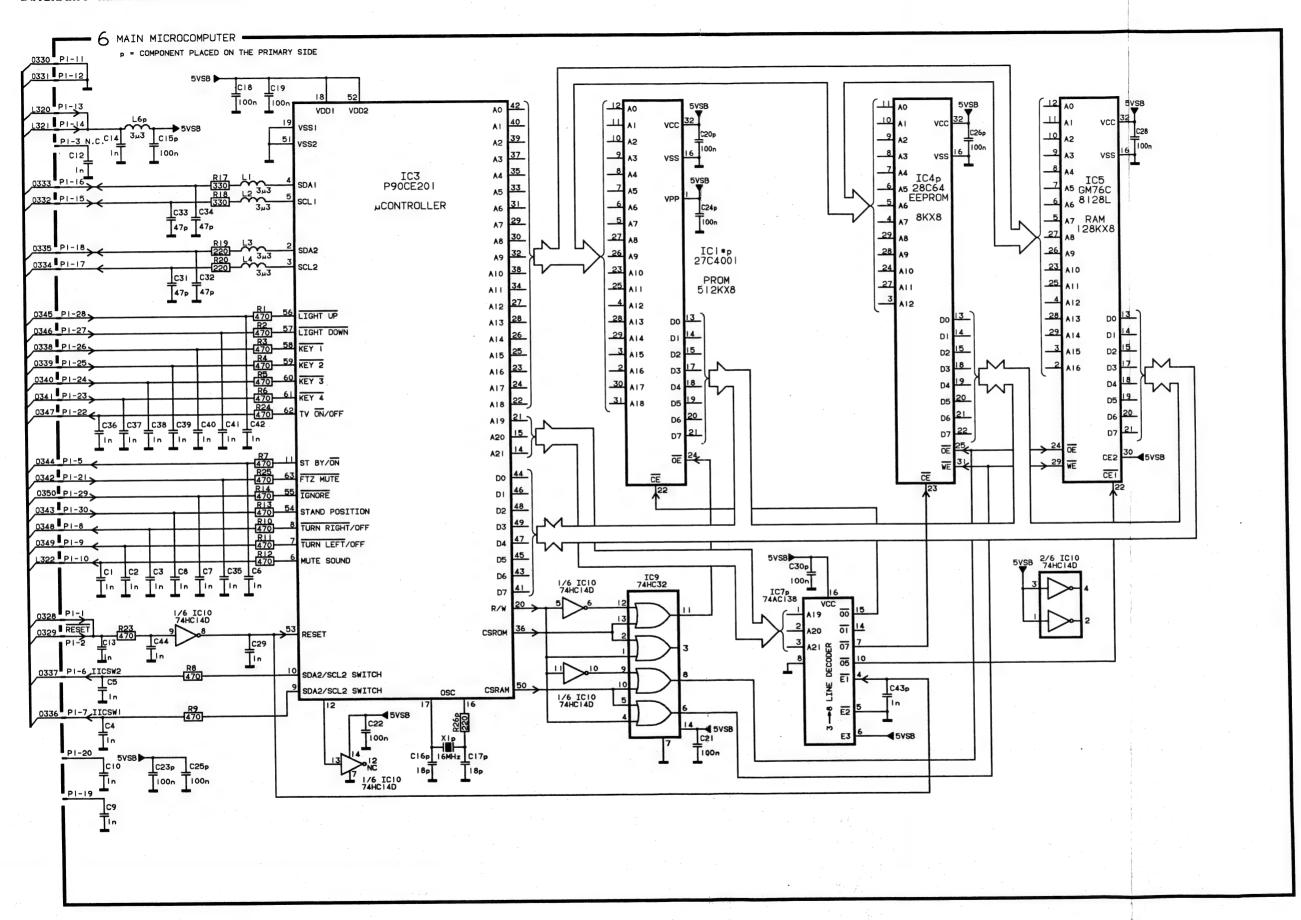


DIAGRAM Q NICAM B/G/I/L

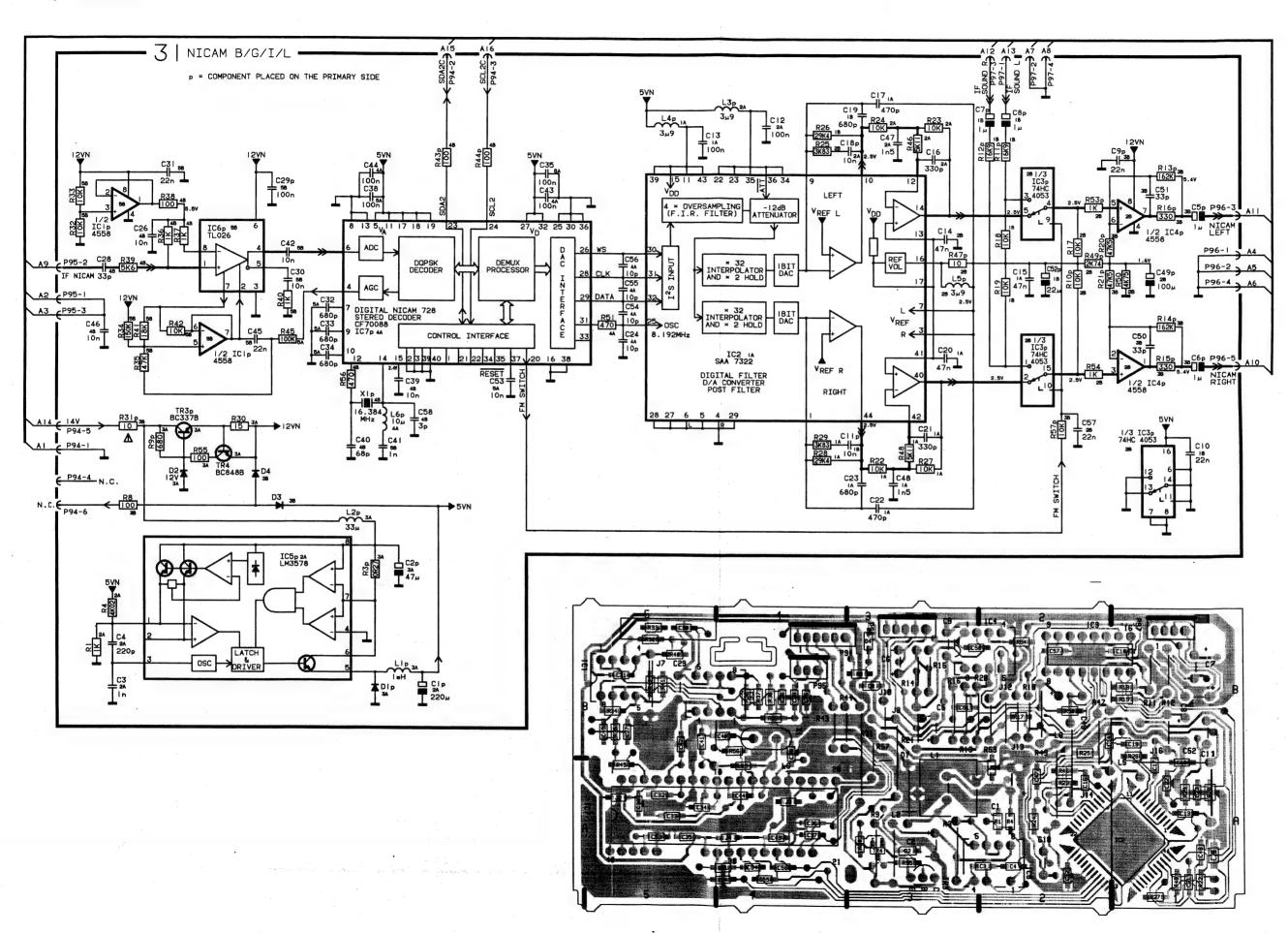


DIAGRAM Q NICAM B/G/I/L (New version)

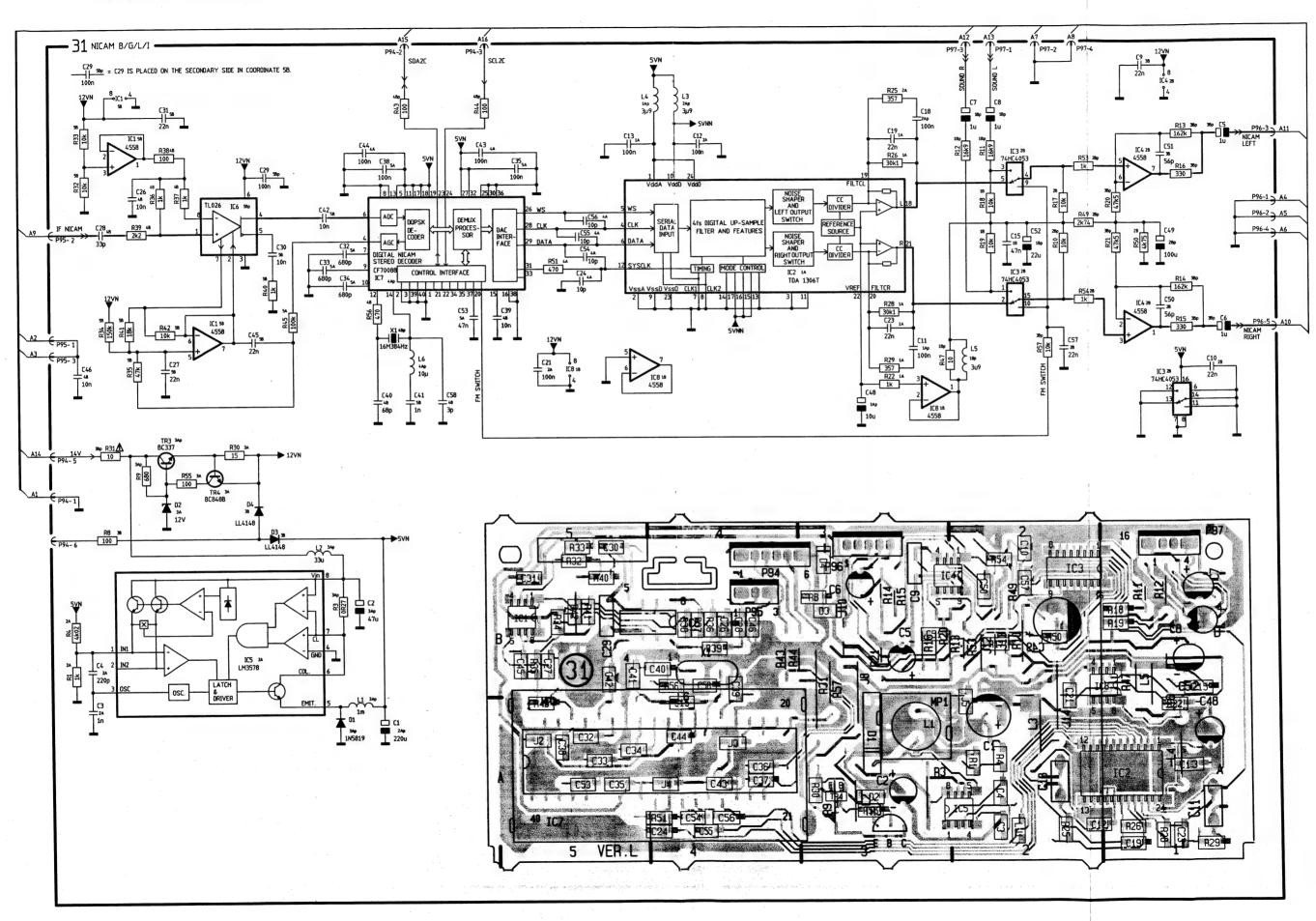


DIAGRAM R MAIN POWER SUPPLY Oscilloscope pictures for diagram R see page 2-29

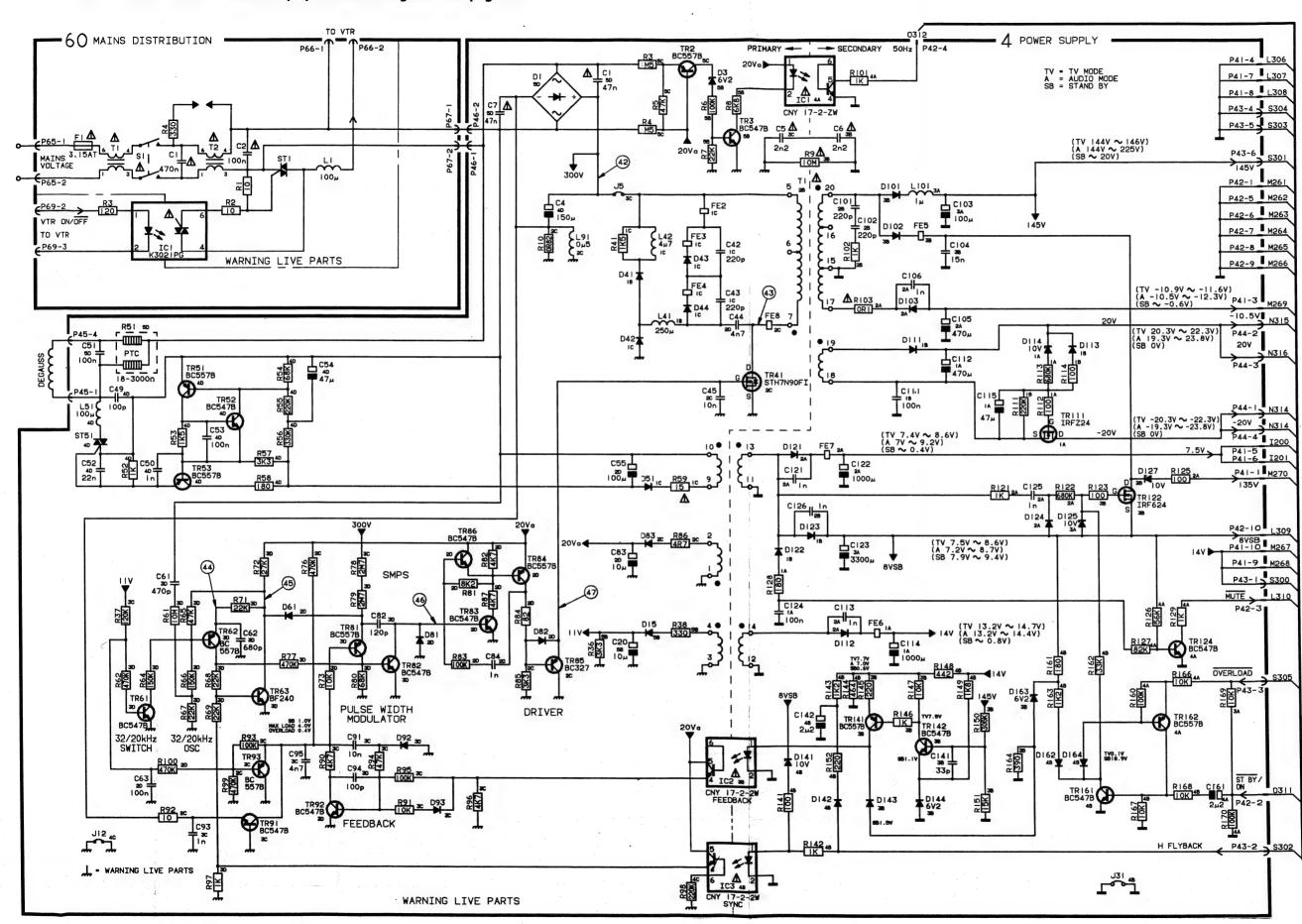


DIAGRAM S DEFLECTION & EHT PCB drawing for PCB 5 see page 2-29 Oscilloscope pictures for diagram S see page 2-29

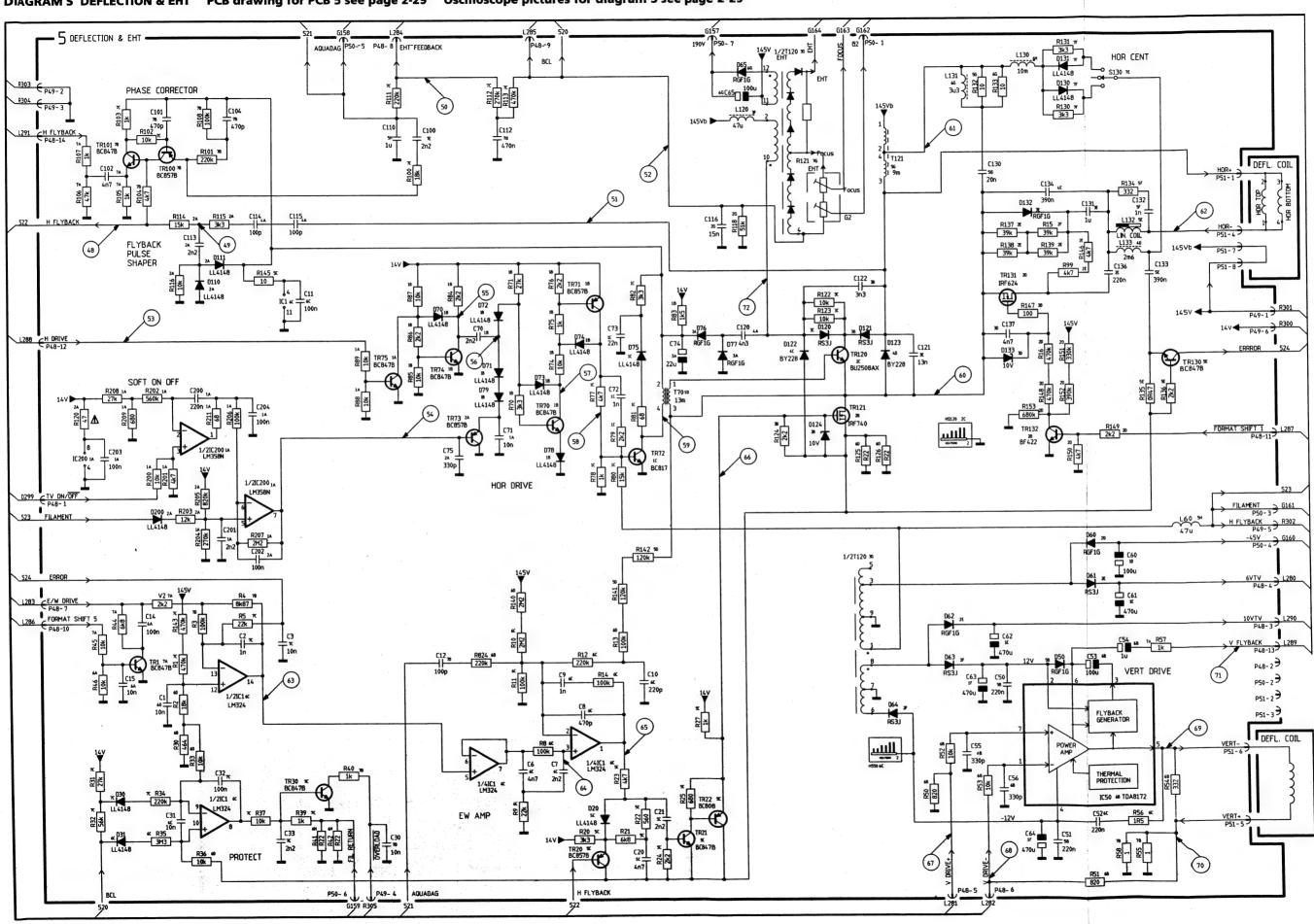


DIAGRAM T DOLBY PROCESSING PCB drawing for PCB 30 see page 2-41

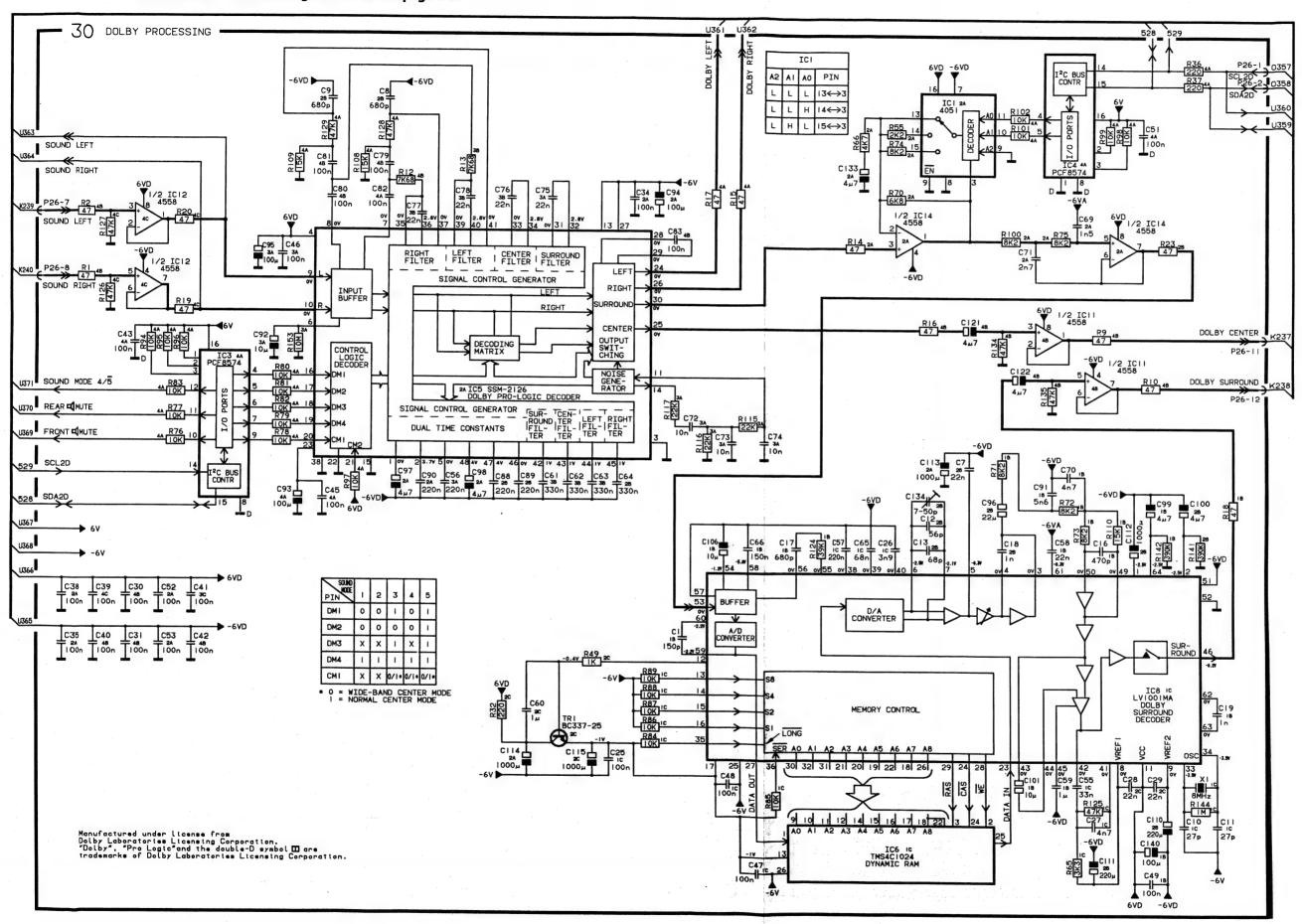
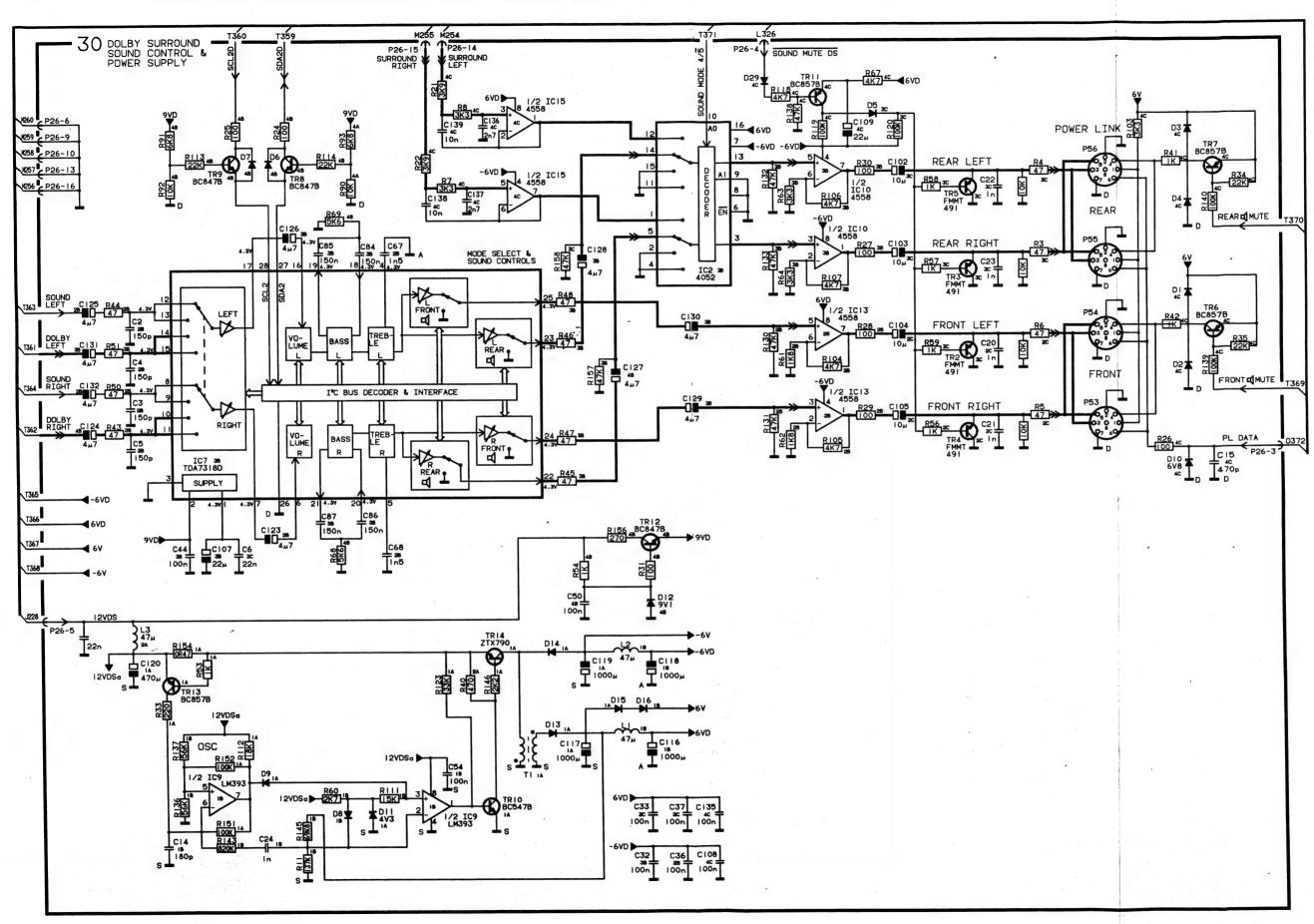
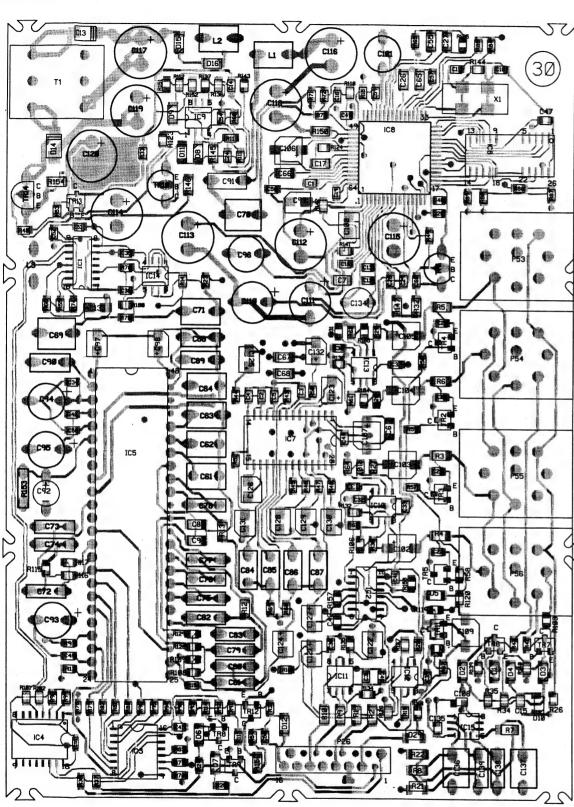
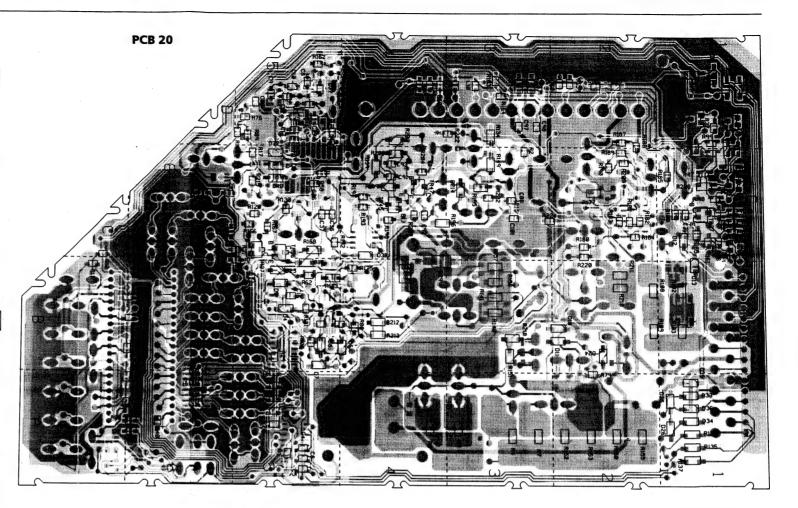


DIAGRAM U DOLBY SURROUND SOUND CONTROL & POWER SUPPLY PCB drawing for PCB 30 see page 2-41









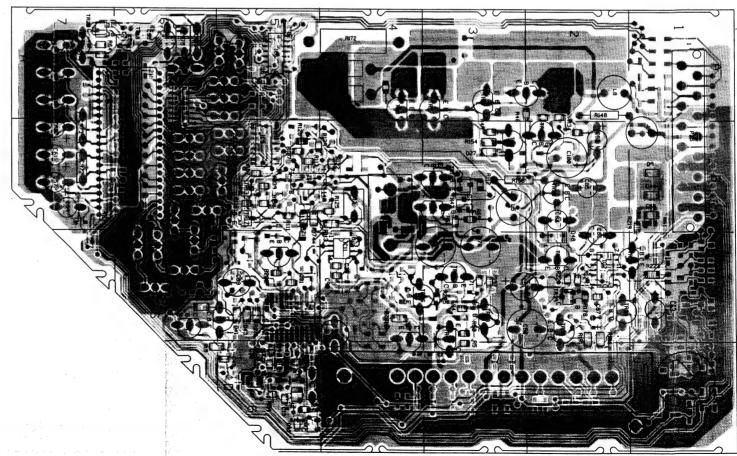


DIAGRAM V SATELLITE VIDEO PROCESSING

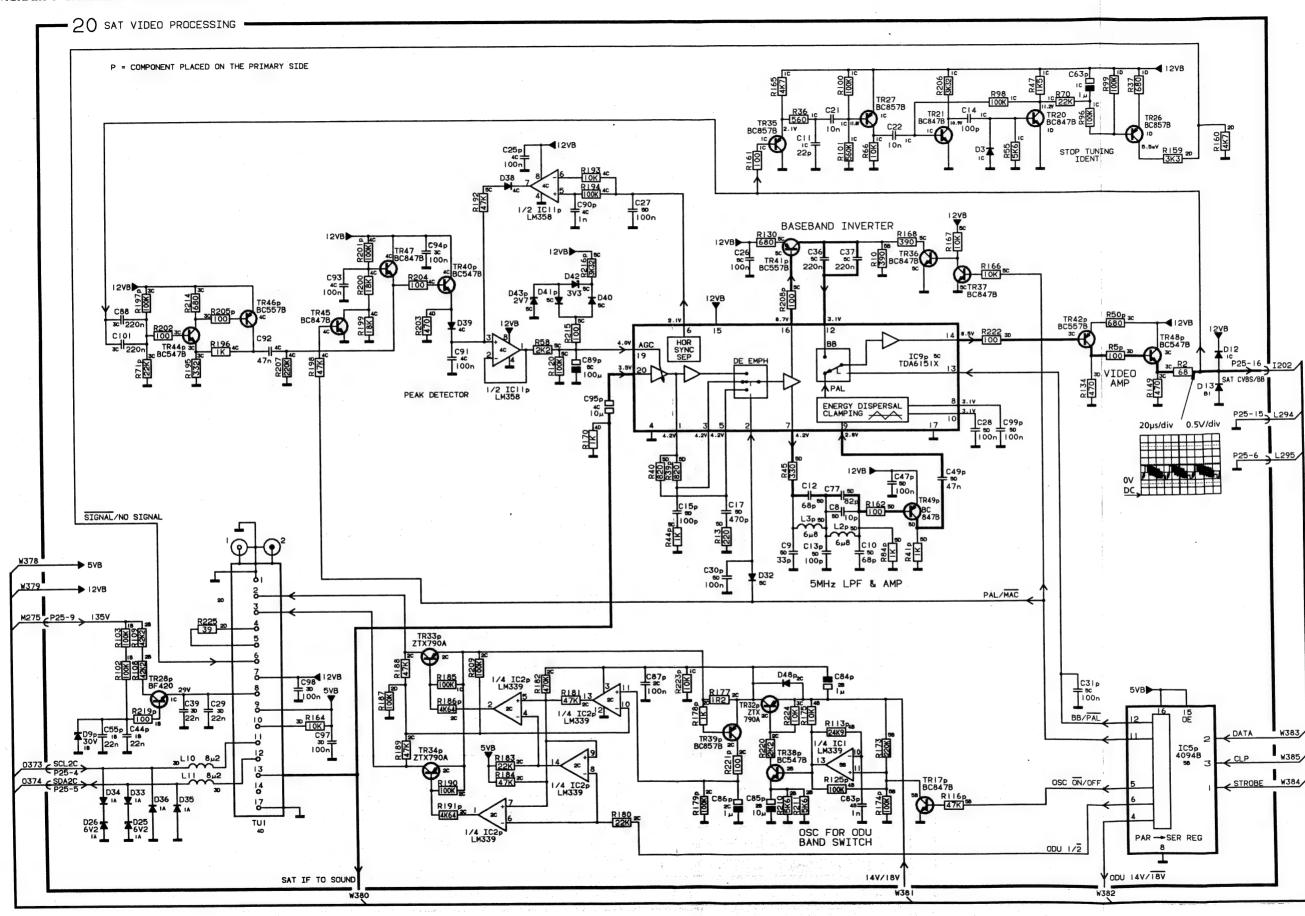


DIAGRAM W SATELLITE SOUND PROCESSING PCB drawings for PCB 20 see page 2-41

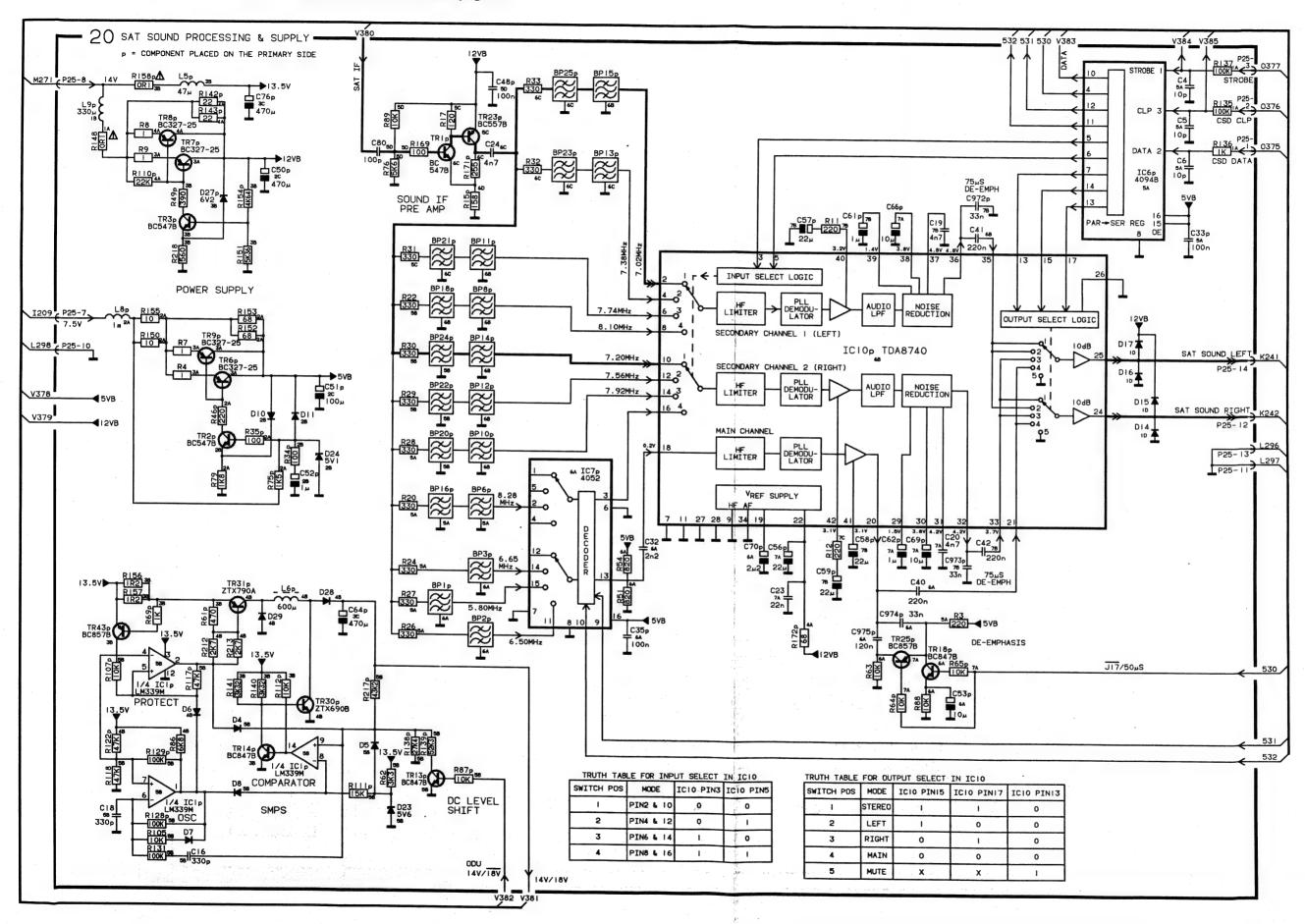


DIAGRAM X CAMCORDER INTERFACE & HEADPHONE

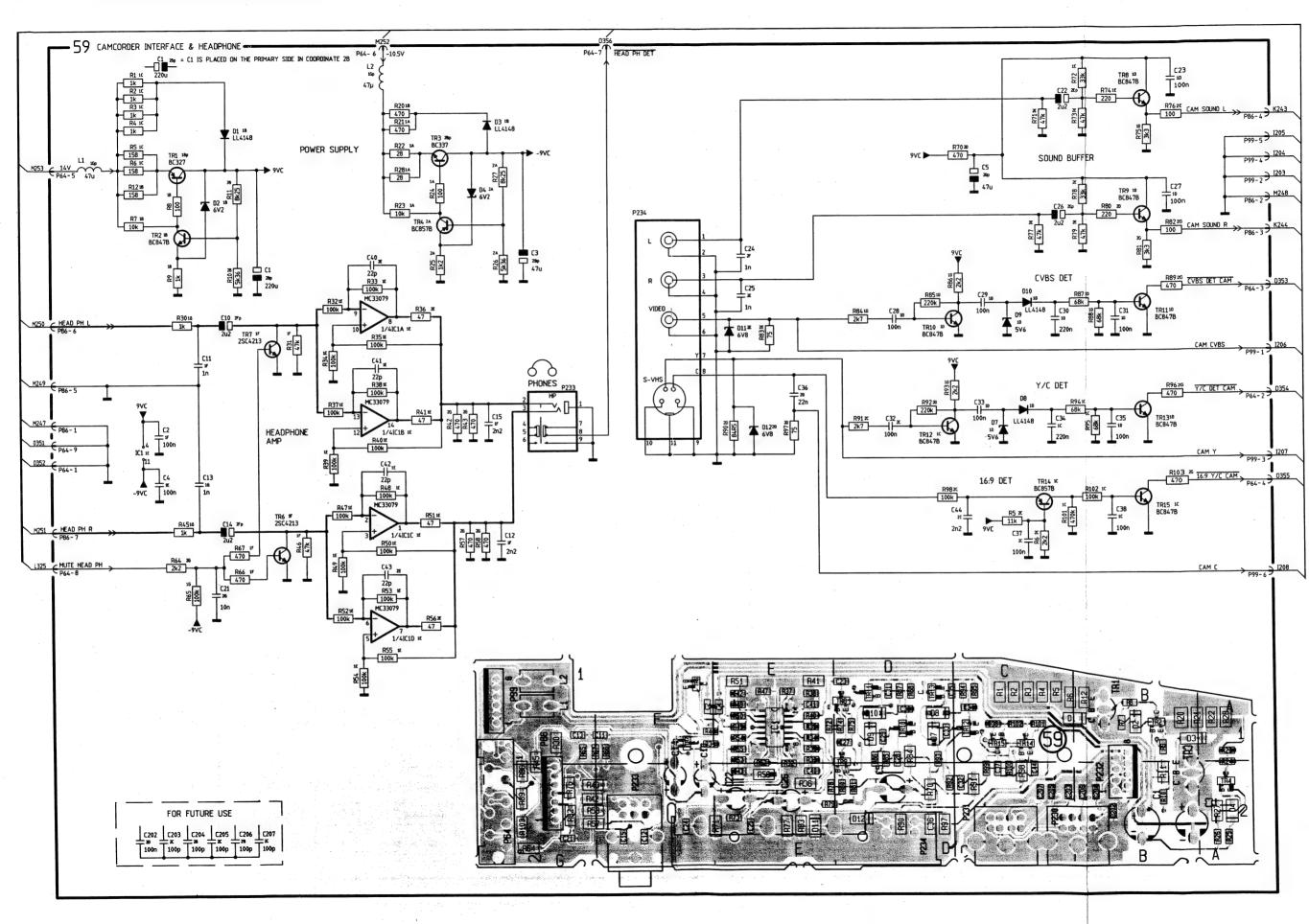
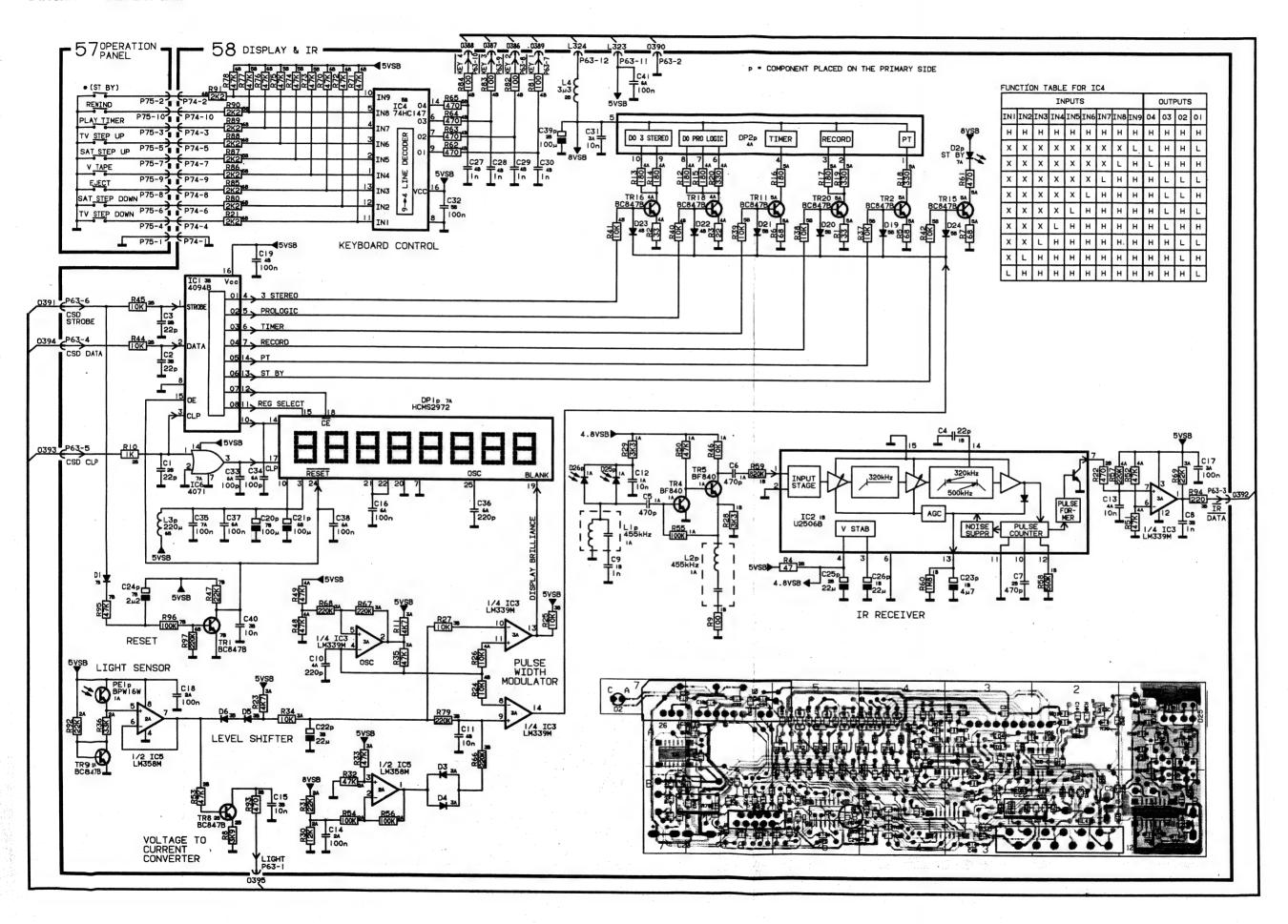
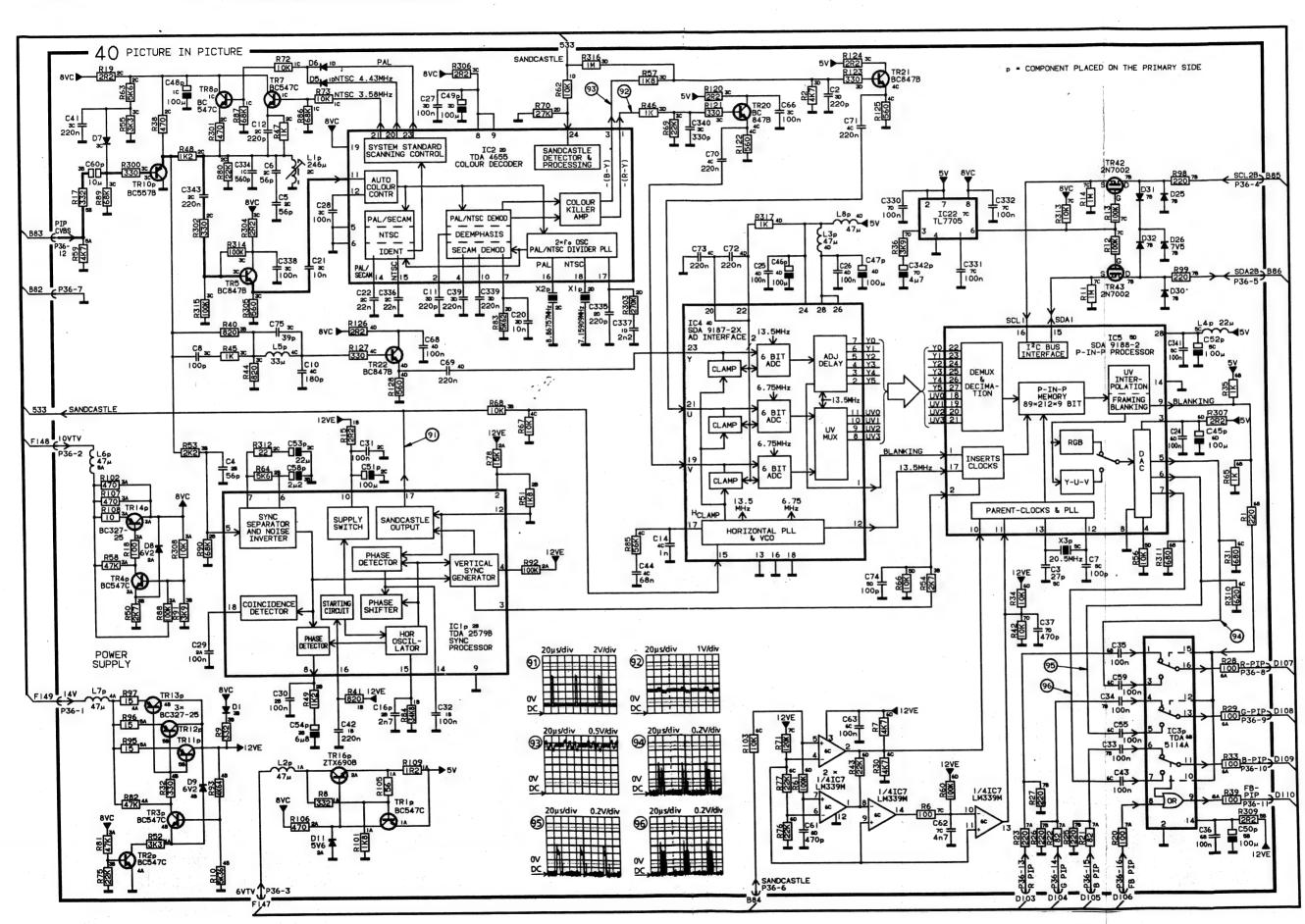


DIAGRAM Y DISPLAY & IR



2-46 DIAGRAM Z

DIAGRAM Z PICTURE IN PICTURE PCB drawing for PCB 40 see page 2-47



PCB 40

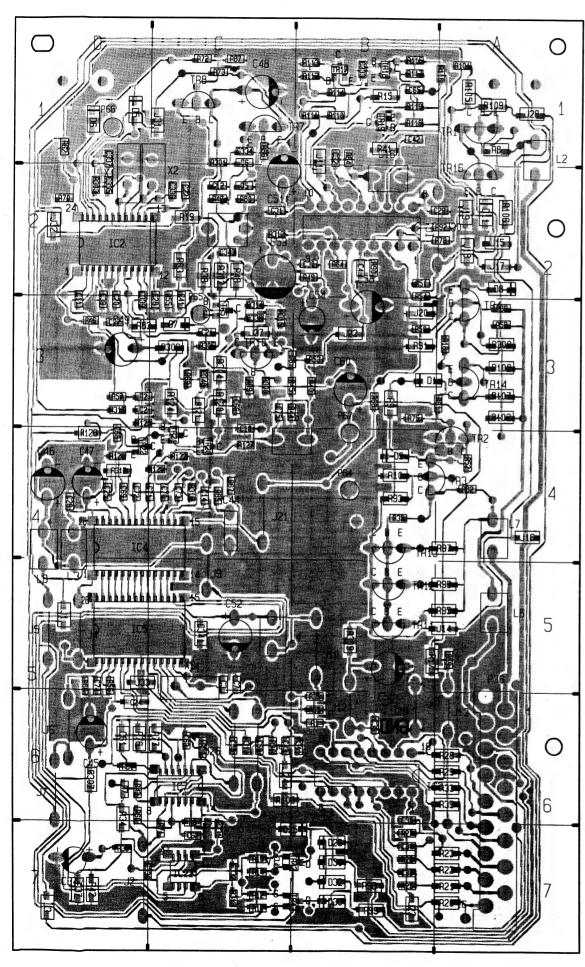
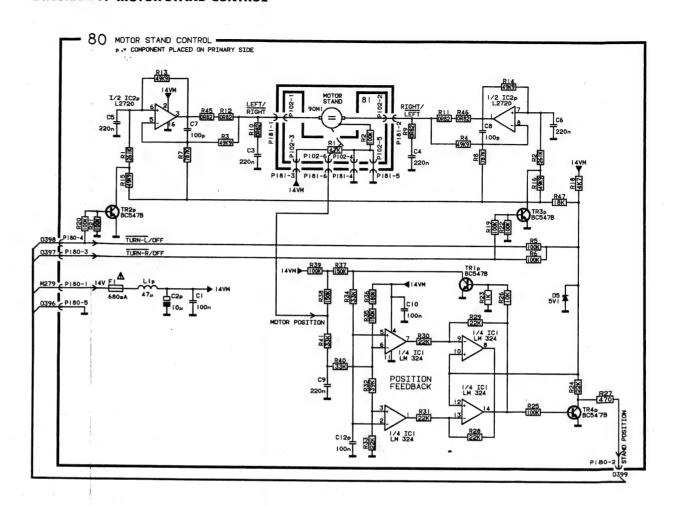
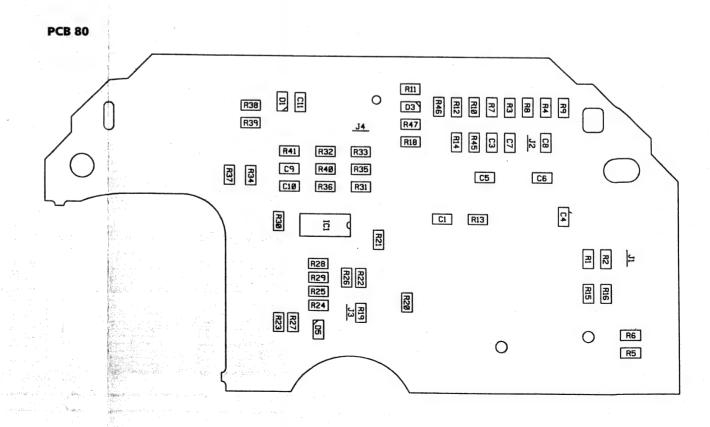


DIAGRAM TT MOTOR STAND CONTROL





LIST OF ELECTRICAL PARTS

| 18 | 51 | 136 | 250 | 5-1-5- | [| |
|----|-----------|-----|-----|--------|---|--|
| E | B 0 | £ | A C | | | |

PCB 1, 8008323 Tuner & IF system B/G (incl. PCB 12)

| Ref 8320755 51 BC 847B TR19 8320811 51 BC 857B Ref 8320755 51 BC 847B BC 847B BC 857B Ref 8320755 51 BC 847B | C3 | 8341794 | 136 | TDA 8417 | | | | |
|---|----------|---------|--------|----------------|-------|---------|-------|------------------------|
| 1766 8320755 51 BC 847B TR19 8320811 51 BC 857B 1778 8320811 51 BC 857B 1788 8320755 51 BC 847B 1790 8300482 250 LL 4148 D15 8300422 250 LL 4148 1012 D16 8300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1014 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1014 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1014 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1014 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1015 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1016 S300644 250 Z6.2V 2% 0.5W D19 8300911 250 Z33V 2% 0 1017 S300641 Z50 Z6.2V 2% 0.5W D19 S300941 Z50 Z2.4V 2% (1017 S300641 Z50 Z5.4V 2% (1017 S300941 Z50 Z5.4V 2% (1017 S301941 Z550 Z5.4V 2% (1017 S301941 Z50 Z5.4V 2% (1017 S301941 | ΓR1- | 8320552 | 18 | BC 327-25 | TR11 | 8320811 | 51 | BC 857B |
| 1877 8320811 51 BC 857B 1878 8320755 51 BC 847B 18710 1878 8320755 51 BC 847B 18710 1871 8300482 250 LL 4148 D15 8300422 250 LL 4148 B16 8300644 250 Z6.2V.2% D19 8300911 250 Z33V 2% 0 D14 D12 8300941 250 Z3.3V 2% 0 D14 D14 D15 8300941 250 Z3.3V 2% 0 D14 D16 8300644 250 Z6.2V.2% D19 8300941 250 Z3.3V 2% 0 D14 D17 S011633 820Ω 5% 1/4W R73 S021074 680Ω 1% 1/4W R74 S021325 10kΩ 1% 1/4W R74 S021225 10kΩ 1% 1/4W R75 S021371 255Ω 1% 1/4W R75 S021371 255Ω 1% 1/4W R76 S021371 255Ω 1% 1/4W R77 S021508 47KΩ 1% 1/4W R79 S021295 10kΩ 1% 1/4W R99 S021225 10kΩ 1% 1/4W R99 S021225 10kΩ 1% 1/4W R95 S021512 220Ω 1% 1/4W R95 S021512 12.1Ω 1% 1/4W R95 S021512 220Ω 1% 1/4W R95 S021512 12.1Ω 1% 1/4W R103 S021518 12.1Ω 1% 1/4W R103 S021518 12.1Ω 1% 1/4W R103 S021518 12.1Ω 1% 1/4W R104 S05012181 12.1Ω 1% 1/4W R104 S050128 | ΓR5 | | | | TR15 | 8320755 | 51 | |
| S320755 51 BC 847B S300482 250 LL 4148 D15 S300422 250 LL 4148 D16 S300644 250 Z6.2V 2% 0.5W D19 S300941 250 Z3.3V 2% 0 D14 D22 S300941 250 Z2.4V 2% 0.5W D19 S300941 250 Z2.4V 2% 0.5W D19 S300941 250 Z2.4V 2% 0.5W D19 S300941 Z50 Z4.4V 2% 0.5W D19 S021325 D19 | TR6 | 8320755 | 51 | BC 847B | TR19 | 8320811 | 51 | BC 857B |
| 101- | TR7 | 8320811 | 51 | BC 857B | | | | |
| D12 D13- B300644 250 Z6.2V 2% 0.5W D19 B300911 Z50 Z33V 2% 0 D14 D22 B300911 Z50 Z33V 2% 0 D15 B300911 Z50 Z33V 2% 0 D16 B300911 Z50 Z33V 2% 0 D17 B300911 Z50 Z2.4V 2% 0 B300911 Z2.4V 2% 0 B300911 Z50 Z2.4V 2% 0 B300911 Z50 Z2.4V 2% 0 B300911 Z2.4V 2% 0 B300911 Z50 Z2.4V 2% | TR8- | 8320755 | 51 | BC 847B | | | | |
| D12 | TR10 | | | | | | | |
| D13- D14 B300644 250 Z6.2V 2% 0.5W D19 B300941 250 Z33V 2% 0 D22 B300941 250 Z2.4V 2% 0 B | D1- | 8300482 | 250 | LL 4148 | D15 | 8300422 | 250 | LL 4148 |
| D14 D22 8300941 250 Z2.4V 2% 0 | D12 | | | | D16 | 8300644 | 250 | Z6.2V 2% 0.5W |
| R1 5011633 820Ω 5% 1/4W R73- R2 5011852 332Ω 1% 1/4W R74 R23- 5021225 10kΩ 1% 1/4W R75 R24 R76- R25 5021371 255Ω 1% 1/4W R77 R26- 5021371 255Ω 1% 1/4W R78 R27 R28 | D13- | 8300644 | 250 | Z6.2V 2% 0.5W | D19 | 8300911 | 250 | Z33V 2% 0.5W |
| R2 | D14 | | | | D22 | 8300941 | 250 | Z2.4V 2% 0.5W |
| R2 | R1 | 5011633 | 8200 | 2.5% 1/4W | R73- | 5021074 | 680Ω | 2 1% 1/4W |
| R23- 5021225 10 kΩ 1 % 1/4W R75 5021334 3.32 kΩ 1 % 1/4W R76 5021371 255Ω 1 % 1/4W R77 R26- 5021508 47 κΩ 1 % 1/4W R79 5021494 4.64 κΩ 1 % 1/4W R38 5021512 220Ω 1 % 1/4W R99 5021225 10 κΩ 1 % 1/4W R34 5021512 220Ω 1 % 1/4W R92 5021074 68 0Ω 1 % 1/4W R35 5021517 30.9 κΩ 1 % 1/4W R95 5021512 220Ω 1 % 1/4W R95 5021512 220Ω 1 % 1/4W R95 5021512 220Ω 1 % 1/4W R95 5021517 20Ω 1 % 1/4W R95 5021517 20Ω 1 % 1/4W R95 5021517 20Ω 1 % 1/4W R95 5021511 2.1Ω 1 % 1/4W R97 R98 5021489 22 κΩ 1 % 1/4W R95 5021518 12.1Ω 1 % 1/4W R99 5021508 47 κΩ 1 % 1/4W R95 5021518 12.1Ω 1 % 1/4W R99 5021508 47 κΩ 1 % 1/4W R95 5012181 12.1Ω 1 % 1/4W R104 R95 5012209 1.87 κΩ 1 % 1/4W R104 R95 F012209 1.87 κΩ 1 % 1/4W R104 R95 F012 | | | | | | | | |
| R24 R25 | | | | | | 5021334 | 3.321 | KΩ 1% 1/4W |
| R25 | | | | | R76- | | | |
| R26- R28 | | 5021371 | 255Ω | 2 1% 1/4W | R77 | | | |
| R28 R31 | | | | | R78 | 5021372 | 5.36 | KΩ 1% 1/4W |
| R31 5021512 220Ω 1% 1/4W R90 5021225 10KΩ 1% 1/4W R34 5021512 220Ω 1% 1/4W R92 5021074 680Ω 1% 1/4W R35 5021517 30.9KΩ 1% 1/4W R95 5021512 220Ω 1% 1/4W R95 5012181 12.1Ω 1% 1/4W R97 R98 5021489 22KΩ 1% 1/4W R95 S012181 12.1Ω 1% 1/4W R99 S021508 47KΩ 1% 1/4W R97 R102 R102 S012181 12.1Ω 1% 1/4W R103 S012181 12.1Ω 1% 1/4W R104 S012209 1.87KΩ 1% 1/4W R110 S021516 18.7KΩ 1% 1/4W R71 S012209 1.87KΩ 1% 1/4W S012209 1.87KΩ 1% 1 | | | | | R79 | | | |
| R34 5021512 220Ω 1% 1/4W R92 5021074 680Ω 1% 1/4W R35 5021517 30.9KΩ 1% 1/4W R96 5021512 220Ω 1% 1/4W R97 R52 5012181 12.1Ω 1% 1/4W R97 R98 5021508 47KΩ 1% 1/4W R95 5012181 12.1Ω 1% 1/4W R102 R102 R60 5012181 12.1Ω 1% 1/4W R103 5021512 220Ω 1% 1/4W R65 5012181 12.1Ω 1% 1/4W R104 R65 5012181 12.1Ω 1% 1/4W R104 S012201 1.87KΩ 1% 1/4W R71 5012209 1.87KΩ 1% 1/4W S102 C2 4000404 22pF 5% 50V C32 4000400 10pF 5% 50V C32 C6 4010274 100nF -20+80% 25V C33 4200824 22μF 20% 50V C34 4200824 22μF 20% 50V C34 4200824 22μF 20% 50V C34 4200824 22μF 20% 50V C30 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 20 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 20 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 20 4010274 100nF -20+ | | 5021512 | 2200 | 2 1% 1/4W | R90 | 5021225 | 10K | 2 1% 1/4W |
| RS2- RS3- RS5- RS5- RS5- S012181 12.1Ω 1% 1/4W RS7- RS7- RS60 S012181 12.1Ω 1% 1/4W RS63- S012181 12.1Ω 1% 1/4W RS65- S012181 12.1Ω 1% 1/4W RS65- S012181 12.1Ω 1% 1/4W RS65- S012181 12.1Ω 1% 1/4W RS71- S012209 1.87KΩ 1% 1/4W R71- S012209 1.87KΩ 1% 1/4W R71- S012209 1.87KΩ 1% 1/4W R71- C2- 4000404 22pF 5% 50V C3- C5- 4000400 10pF 5% 50V C3- C6- 4010274 100nF -20+80% 25V C3- C7- 4200824 22μF 20% 50V C3- C8- 420171 1μF 20% 50V C3- C9- 4000400 10pF 5% 50V C40- 4200688 47μF 20% 50V C10- 4010216 22nF 10% 100V C42- 4010314 220nF -20+80% C12- 4010216 22nF 10% 100V C42- 4010314 220nF -20+80% C20- 4010273 47nF -20+80% 50V C20- 4010273 47nF -20+80% 50V C21- 4010263 2.2nF 10% 50V C21- 4010263 2.2nF 10% 50V C21- 4010263 2.2nF 10% 50V C3- C21- C21- S020916 Coil 47μH 450mA C3- C42- C53- C64- C64- C64- C65- C67- C67- C67- C68- C67- C68- C67- C68- C68- C68- C68- C69- C69- C69- C69- C69- C69- C69- C69 | | 5021512 | 2200 | 2 1% 1/4W | R92 | | | |
| R53 R55- R55- S012181 12.1Ω 1% 1/4W R55- R60 S012181 12.1Ω 1% 1/4W R63 S012181 12.1Ω 1% 1/4W R65 S012181 12.1Ω 1% 1/4W R71 S012209 1.87 KΩ 1% 1/4W C2 4000400 10pF 5% 50V C32 C6 4010274 100nF -20+80% 25V C7 4200824 22μF 20% 50V C34 C8 4201171 1μF 20% 50V C10 4010216 22nF 10% 100V C12 4010216 22nF 10% 100V C2 4010273 47nF -20+80% 50V C21 4010273 47nF -20+80% 50V C21 4010273 47nF -20+80% 50V C31 4010274 100nF -20+80% 50V C32 C40 C51 C62 C7 C7 C8 C8 C9 C9 C9 C10 | R35 | 5021517 | 30.9 | KΩ 1% 1/4W | R96- | 5021512 | 2200 | 2 1% 1/4W |
| R55- 5012181 12.1Ω 1% 1/4W R99- R102 R57 R102 R60 5012181 12.1Ω 1% 1/4W R103- 5021512 220Ω 1% 1/4W R63 5012181 12.1Ω 1% 1/4W R104 R65 5012181 12.1Ω 1% 1/4W R110 5021516 18.7KΩ 1% 1/4W R71 5012209 1.87KΩ 1% 1/4W C2 4000404 22pF 5% 50V C31- 4010314 220nF -20+80% 25V C33- 4200824 22μF 20% 50V C6 4010274 100nF -20+80% 25V C34- 4200824 22μF 20% 50V C7 4200824 22μF 20% 50V C34- 4200824 22μF 20% 50V C9 4000400 10pF 5% 50V C39 4200628 100μF 20% 16V C9 4000400 10pF 5% 50V C40 4200688 47μF 20% 50V C10 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 200 4010216 22nF 10% 100V C45 4200824 22μF 20% 50V C20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 200 4010263 2.2nF 10% 50V L2- 8020916 Coil 47μH 450mA L98- 8021082 Coil 8.2μH 10% L99 L4 8021077 Coil 0.47μH 10% TU1 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | R52- | 5012181 | 12.1 | Ω 1% 1/4W | R97 | | | |
| R57 R60 | R53 | | | | R98 | | | |
| R60 | R55- | 5012181 | 12.1 | Ω 1% 1/4W | R99- | 5021508 | 47K | Ω 1% 1/4W |
| R63 | R57 | | | | R102 | | | |
| R65 | R60 | 5012181 | 12.1 | Ω 1% 1/4W | R103- | 5021512 | 2209 | 2 1% 1/4W |
| R71 5012209 1.87KΩ 1% 1/4W C2 4000404 22pF 5% 50V C31- C5 4000400 10pF 5% 50V C32 C6 4010274 100nF -20+80% 25V C33- C7 4200824 22μF 20% 50V C34 C8 4201171 1μF 20% 50V C39 4200628 100μF 20% 16V C9 4000400 10pF 5% 50V C40 4200688 47μF 20% 50V C10 4010216 22nF 10% 100V C42 4010314 220nF -20+80% C12 4010216 22nF 10% 100V C45 4200824 22μF 20% 50V C20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% C21 4010263 2.2nF 10% 50V L2- L3 8020916 Coil 47μH 450mA L98- L3 L99 L4 8021077 Coil 0.47μH 10% TU1 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | R63 | 5012181 | 12.1 | Ω 1% 1/4W | R104 | | | |
| C5 | | | | | R110 | 5021516 | 18.7 | KΩ 1% 1/4W |
| C5 4000400 10pF 5% 50V C32 C6 4010274 100nF -20+80% 25V C33- 4200824 22μF 20% 50V C7 4200824 22μF 20% 50V C34 C8 4201171 1μF 20% 50V C39 4200628 100μF 20% 16V C9 4000400 10pF 5% 50V C40 4200688 47μF 20% 50V C10 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 200 4010273 47nF -20+80% 50V C20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 201 4010263 2.2nF 10% 50V C21 4010263 2.2nF 10% 50V C22 8020916 Coil 47μH 450mA L98- 8021082 Coil 8.2μH 10% L3 L99 C33 8021077 Coil 0.47μH 10% C44 8090105 Crystal 10.0MHz C55 4200824 22μF 20% 50V C56 4010274 100nF -20+80% 200 4010274 100nF -20+80 | | 4000404 | 22pl | 5% 50V | C31- | 4010314 | 2201 | nF -20+80% 2 5V |
| C7 | | 4000400 | 10pf | 5% 50V | C32 | | | |
| C8 | C6 | 4010274 | 100r | rF -20+80% 25V | C33- | 4200824 | 22µ | F 20% 50V |
| C9 4000400 10pF 5% 50V C40 4200688 47μF 20% 50V C10 4010216 22nF 10% 100V C42 4010314 220nF -20+80% 2012 4010216 22nF 10% 100V C45 4200824 22μF 20% 50V C20 4010273 47nF -20+80% 50V C61 4010274 100nF -20+80% 201 4010263 2.2nF 10% 50V C21 4010263 2.2nF 10% 50V C21 8020916 Coil 47μH 450mA L98-L99 L4 8021077 Coil 0.47μH 10% L99 L4 8050148 Tuner UV 916mA C11 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | C7 | 4200824 | 22µ1 | 20% 50V | C34 | | | |
| C10 | C8 | 4201171 | 1µF | 20% 50V | C39 | | | |
| C12 | C9 | 4000400 | 10pl | 5% 50V | C40 | | | |
| C20 | | | | | | | | |
| C21 4010263 2.2nF 10% 50V L2- 8020916 Coil 47μH 450mA L98- L99 L4 8021077 Coil 0.47μH 10% TU1 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | | | | | | | | |
| L3 L4 8021077 Coil 0.47μH 10% TU1 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | | | | | C61 | 4010274 | 100 | nF -20+80%25V |
| L4 8021077 Coil 0.47μH 10% TU1 8050148 Tuner UV 916mA X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | | 8020916 | Coil | 47µH 450mA | | 8021082 | Coil | 8.2µH 10% |
| X10 8090105 Crystal 10.0MHz P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | | 8021077 | 7 Coil | 0.47µH 10% | L99 | | | |
| P27- 7229141 Holder f/ribbon cable P89 7221046 Plug 6/6 pole | TU1 | 8050148 | 3 Tun | er UV 916mA | | | | |
| · · | X10 | 809010 | 5 Cry | stal 10.0MHz | | | | |
| P28 10 pole P92 7500296 Contact bin | | 722914 | | | | | | |
| P72 7221121 Plug 16/16 pole | P28 | | | | P92 | 7500296 | Cor | ntact pin |

| 18 | □19:0 | 23 | 51 | 2136 | 149 | ∂150 € | 7 1515 |
|-----|---------|--------|-----|--------|-------------|--------|--------|
| E | C B E | B E C | E B | = | HEF xxxx 1— | 1-> | |
| 250 | X TOTAL | R-TERM | | 2 - 17 | | ran e | |
| A_C | | | | | | | |

Resistors not referred to are standard, see page 3-27

PCB 1, 8008324 Tuner & IF system I (incl. PCB 12)

| IC2Δ | 8341072 149 4053 | | |
|---------------|-----------------------------|---------|---------------------------|
| TR13- TR14 | 8320755 51 BC 847B | TR17 | 8320811 51 BC 857B |
| D26 | 8300644 250 Z6.2V 2% | 0.5W | |
| C1 | 4010265 3.3nF 5% 50V | C35 | 4201174 2.2µF 20% 50V |
| C22 | 4010274 100nF -20+80% | 25V C37 | 4200525 22µF 20% 10V |
| C28 | 4200824 22µF 20% 50V | C41 | 4200824 22µF 20% 50V |

Other electrical parts like PCB 1, Tuner & IF system B/G

PCB 1, 8008327 Tuner & IF system B/G/L/L' (incl. PCB 12)

| C30 | 4010314 220nF -20+80% 25V | | |
|-----|----------------------------|-----|------------------------|
| L4 | 8021093 Coil 0.39µH 10% | L97 | 8021080 Coil 3.9µH 10% |
| BP4 | 8030242 Cer. filter 6.5MHz | | |

PCB 1, 8008326 Tuner & IF system B/G/L/L'/I (incl. PCB 12)

| C30 | 4010314 220nF -20+80% 25V | C41 | 4200824 22µF 20% 50V |
|-----|----------------------------|-----|------------------------|
| L4 | 8021093 Coil 0.39µH 10% | L97 | 8021080 Coil 3.9µH 10% |
| BP4 | 8030242 Cer. filter 6.5MHz | | |
| L4 | 8021094 Coil 0.27μH 10% | | |

PCB 1, 8008325 Tuner & IF system B/G/D/K/M/I (incl. PCB 12)

| TR13 | 8320755 51 | BC 847B | TR17 | 8320811 | 51 | BC 857B |
|------|-------------------|-------------|------|---------|------|---------|
| C1 | 4010265 3.3nF | 10% 50V | C37 | 4200525 | 22µF | 20% 10V |
| C30 | 4010314 220nF | -20+80% 25V | C41 | 4200824 | 22µF | 20% 50V |
| L4 | 8021094 Coil 0 | .27µH 10% | | | | |

Δ indicates that static electricity may destroy the component

PCB 2, 8008842 Video/Chroma & Teletext (incl. PCB 7)

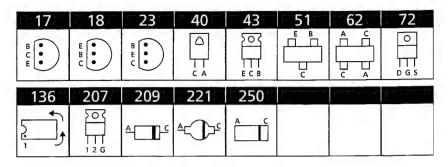
| IC1Δ | 8341025 1 | 50 | 4094 | IC10 | 8341857 | | LM 339 |
|---------------|------------------|-----|------------------|----------------|--------------------|----------|-----------------------|
| IC2 | 8341933 1 | 36 | TDA 4565 | IC11A | 8341025 | | 4094 |
| IC3∆ | 8342343 1 | | TDA 4661 | IC12∆ | 8341072 | | 4053 |
| IC4 | 8341708 1 | | TDA 4780 | IC13∆ | 8341173 | | PCF 8574 |
| ΙC7Δ | 8342193 1 | | TDA 9162 | IC14 | 8342620 | | LM 78L05ACM LM 339 |
| IC8 | 8341033 1 | | LF 353 | IC601 | 8341857 8342522 | | HEF 4020B |
| IC9 | 8341041 1 | 50 | LM 324 | IC602∆ | 6342322 | 130 | 1121 40208 |
| | 0220755 | F4 | DC 9479 | TR63 | 8320755 | 51 | BC 847B |
| TR1- TR2 | 8320755 | 51 | BC 847B | TR64- | 8320497 | 18 | BC 547B |
| TR3 | 8320740 | 51 | BF 840 | TR65 | 0020 .27 | | |
| TR4- | | 51 | BC 847B | TR66- | 8320811 | 51 | BC 857B |
| TR6 | | | | TR67 | | | |
| TR8- | 8320497 | 18 | BC 547B | TR68 | 8320740 | 51 | BF 840 |
| TR9 | | | | TR69 | 8320755 | 51 | BC 847B |
| TR10 | 8320740 | 51 | BF 840 | TR70 | 8320552 | 18 | BC 327-25 |
| TR11 | 8320755 | 51 | BC 847B | TR71 | 8320811 | 51 | BC 857B |
| TR19 | | | | TR80 | 8320755 | 51 | BC 847B BC 327-25 |
| TR20- | 8320497 | 18 | BC 547B | TR81 | 8320552 | 18 51 | BC 327-25 BC 847B |
| TR22 | 0220755 | | DC 047D | TR82 TR83 | 8320755 8320811 | 51 | BC 857B |
| TR23- | 8320755 | 51 | BC 847B | TR85 | 8320755 | 51 | BC 847B |
| TR32 TR33- | 8320811 | 51 | BC 857B | TR86 | 8320733 | 51 | BC 857B |
| TR38 | 6320611 | 31 | BC 637B | TR88 | 8320755 | 51 | BC 847B |
| TR39 | 8320497 | 18 | BC 547B | TR90 | 8320755 | 51 | BC 847B |
| TR40- | 8320755 | 51 | BC 847B | TR92- | 8320755 | 51 | BC 847B |
| TR41 | | | | TR94 | | | |
| TR44- | 8320552 | 18 | BC 327-25 | TR95 | 8320811 | 51 | BC 857B |
| TR45 | | | | TR469 | 8320811 | 51 | BC 857B |
| TR46 | 8320552 | 18 | BC 327-25 | TR481 | 8320811 | 51 | BC 857B |
| TR48- | 8320740 | 51 | BF 840 | TR486- | 8320811 | 51 | BC 857B |
| TR49 | | | | TR487 | | | 0.0.470 |
| TR50 | 8321072 | 19 | ZTX 690B | TR488 | 8320755 | 51 | BC 847B |
| TR51- | 8320755 | 51 | BC 847B | TR504 | 8320811 | 51 51 | BC 857B BC 847B |
| TR54 | 0220552 | 40 | DC 227 25 | TR505 TR518 | 8320755 8320755 | 51 | BC 847B |
| TR55- TR56 | 8320552 | 18 | BC 327-25 | TR601 | 8320755 | 51 | BC 847B |
| TR57 | 8320811 | 51 | BC 857B | TR602- | 8320755 | 51 | BC 847B |
| TR58- | 8320567 | 23 | BF 450 | TR612 | | | |
| TR59 | 332030. | | | TR613- | 8320811 | 51 | BC 857B |
| TR60- | 8320740 | 51 | BF 840 | TR614 | | | |
| TR61 | | | | TR616 | 8320811 | 51 | BC 857B |
| TR62 | 8320811 | 51 | BC 857B | | | | |
| D.2 | 0200402 | 250 | 11 4140 | D27 | 9300606 | 250 | LL 4448 |
| D2- | 8300482 | 250 | LL 4148 | D37- D40 | 8300606 | 250 | LL 4440 |
| D4 D5 | 8300606 | 250 | 11 4448 | D40 | 8300636 | 250 | Z7.5V 5%O.5W |
| D6 | 8300635 | | | D43- | | | LL 4448 |
| D7- | | | LL 4148 | D46 | | | |
| D13 | | | | D47 | 8300636 | 250 | Z7.5V 5% O .5W |
| D15- | 8300482 | 250 | LL 4148 | D49- | 8300482 | | |
| D18 | | | | D51 | | | |
| D19 | 8300635 | 250 | BA 683 | D52 | 8300606 | | |
| D20- | 8300482 | 250 | LL 4148 | D60 | 8300482 | | |
| D21 | | | | D67 | 8300606 | | |
| D22 | | | Z6.2V 2% 0.5W | D69 | 8300606 | | |
| D23 | | | Z5.1V 2% 0.5W | D70 | 8300482 | | |
| D24- | 8300644 | 250 | Z6.2V 2% 0.5W | D72- | 8300482 | 250 | LL 4148 |
| D25 | 0200763 | 250 | 70 1\/ 20/ 0 E\# | D73 D74 | 8300606 | 250 | LL 4448 |
| D26 D27 | 8300/62 | | Z9.1V 2% 0.5W | D601- | | | LL 4148 |
| D27 | | | LL 4148 | D610 | 0300402 | | 22 / . |
| D29 | 0300402 | | -L-1170 | 2010 | | | |
| D30- | 8300635 | 250 | BA 683 | | | | |
| D30- | 2500033 | | | | | | |
| D32 | 8300482 | 250 | LL 4148 | | | | |
| D33 | | | Z6.2V 2% 0.5W | | | | |
| D34 | 8300584 | 250 | Z15V 5%0.5W | | | | |
| D35 | | | Z5.6V 2%0.5W | | | | |
| D36 | 8300774 | 250 | Z5.1V 5% 0.5W | | | | |

[△] indicates that static electricity may destroy the component

Resistors not referred to are standard, see page 3-27

| R4- | 5021510 2.2Ω1% 1/4W | R278 | 5012131 316Ω 1% 1/8W |
|-------------|--|---------------|--|
| R5 | | R279 | 5021225 10KΩ 1% 1/4W |
| R6 | 5021074 680Ω 1% 1/4W | R280 | 5021484 100Ω 1% 1/4W |
| R7 | 5021510 2.2Ω 1% 1/4W | R281- | 5012131 316Ω 1% 1/8W |
| R8- | 5021484 100Ω 1% 1/4W | R282 | |
| R9 | | R284 | 5021484 100Ω 1% 1/4W |
| R10- | 5021501 390Ω 1% 1/4W | R285 | 5021511 470Ω 1% 1/4W |
| R11 | 5044574 41/0 40/ 414141 | R286 | 5021484 100Ω 1% 1/4W |
| R12- | 5011631 1KΩ 1% 1/4W | R287- | 5021074 680Ω 1% 1/4W |
| R13 | F021F10 2 20 10/ 1/4/M | R288 | 5021226 100KΩ 1% 1/4W |
| R15 | 5021510 2.2Ω 1% 1/4W 5012202 4.7Ω 5% 1/4W | R289 R291 | 5011631 1KΩ 1% 1/4W |
| R16 R18 | 5012202 4./Ω 5% 1/4W 5011903 180Ω 1% 1/4W | R291- | 5021512 220Ω 1% 1/4W |
| R20 | 5021510 2.2Ω 1% 1/4W | R295 | 3021312 22032 170 17444 |
| R23 | 5011842 1.05KΩ 1% 1/8W | R296 | 5012217 150KΩ 1% 1/10W |
| R29 | 5021511 470Ω 1% 1/4W | R299 | 5021494 4.64KΩ 1% 1/4W |
| R31 | 5021074 680Ω 1% 1/4W | R300 | 5021510 2.2Ω 1% 1/4W |
| R32- | 5011631 1KΩ 1% 1/4W | R302 | 5021484 100Ω 1% 1/4W |
| R33 | | R303 | 5021226 100KΩ 1% 1/4W |
| R34 | 5011912 1.2KΩ 1% 1/8W | R304 | 5012350 27.4KΩ 1%1/10W |
| R53 | 5011631 1KΩ 1% 1/4W | R306 | 5021226 100KΩ 1% 1/4W |
| R69 | 5011631 1KΩ 1% 1/4W | R307- | 5021512 220Ω 1% 1/4W |
| R107 | 5011631 1KΩ 1% 1/4W | R308 | |
| R126 | 5012200 2.2KΩ 1% 1/4W | R361- | 5012240 100KΩ 1% 1/10W |
| R132 | 5012200 2.2KΩ 1% 1/4W | R362 | |
| R136 | 5021511 470Ω1% 1/4W | R400 | 5012200 2.2KΩ 1% 1/4W |
| R155 | 5011530 5.6KΩ 1% 1/8W | R418 | 5011530 5.6KΩ 1% 1/8W |
| R166 | 5012332 4.7KΩ 1% 1/10W | R447 | 5021484 100Ω 1% 1/4W |
| R181 | 5012361 1.5KΩ 1% 1/10W | R448 | 5021512 220Ω 1% 1/4W |
| R198 | 5021484 100Ω 1% 1/4W | R459 | 5021225 10KΩ 1% 1/4W |
| R210 | 5012218 11.8KΩ 1% 1/10W | R481 | 5012200 2.2KΩ 1% 1/4W |
| R222 | 5012223 4.64KΩ 1% 1/8W | R488- | 5021484 100Ω 1% 1/4W |
| R224 | 5012309 5.36KΩ 1% 1/10W | R489 | |
| R235 | 5021508 47KΩ 1% 1/4W | R507 | 5011631 1KΩ 1% 1/4W |
| R252 | 5012331 10KΩ 1% 1/10W | R508 | 5021074 680Ω 1% 1/4W |
| R255 | 5012365 11KΩ 1% 1/10W | R509- | 5021510 2.2Ω 1% 1/4W |
| R258 | 5012298 22KΩ 1% 1/10W | R512 | |
| R262 | 5012242 47KΩ 1% 1/10W | R513 | 5011631 1KΩ 1% 1/4W |
| R263- | 5012161 3.9KΩ 1% 1/8W | R514- | 5021484 100Ω 1% 1/4W |
| R264 | | R515 | |
| R265 | 5012242 47KΩ 1% 1/10W | R516 | 5021510 2.2Ω 1% 1/4W |
| R266 | 5012239 39KΩ 1% 1/10W | R519 | 5021510 2.2Ω 1% 1/4W |
| R267 | 5011983 324Ω 1% 1/8W | R524- | 5021492 2.7KΩ 1% 1/4W |
| R268- | 5021511 470Ω 1% 1/4W | R525 | F042245 F6 2KO 4 0/ 4/40\A/ |
| R270 | | R630- | 5012316 56.2KΩ 1% 1/10W |
| R271 | 5012131 316Ω 1% 1/8W | R631 | F042007 F2KO 40/ 4/40M |
| R273- | 5021226 100KΩ 1% 1/4W | R632 | 5012097 62KΩ 1% 1/10W |
| R275 | E042220 4KO 40/ 4/40M | R654 | 5012234 40.2KΩ 1 % 1/10W 5012266 7.15KΩ 1 % 1/10W |
| R276 | 5012230 1KΩ 1% 1/10W | R655 | 3012266 7.13K22 1 70 1710VV |
| C1 | 4000412 100pF 5% 50V | C26 | 4000416 220pF 5% 50V |
| C2 | 4000400 10pF 5% 50V | C28 | 4000406 33pF 5% 50V |
| C3- | 4000412 100pF 5% 50V | C29- | 4000422 680pF 5% 50V |
| C4 | | C31 | |
| C5 | 4000219 10pF ±0.5pF 50V | C33 | 4010271 10nF 10% 50V |
| C8 | 4000219 10pF ±0.5pF 50V | C34 | 4100237 2.2nF 5% 63V |
| C9 | 4000410 68pF 5% 50V | C35 | 4010271 10nF 10% 50V |
| C10 | 4000219 10pF ±0.5pF 50V | C36 | 4010316 100nF 10 % 25V |
| C11 | 4010316 100nF 10% 25V | C37 | 4010272 22nF -20+80% 50V |
| C12 | 4010314 220nF -20+80% 25V | C38 | 4000420 470pF 5% 50V 4010272 22nF-50+80% 50V |
| C13 C14- | 4000412 100pF 5% 50V 4000411 82pF 5% 50V | • C39- C41 | 40102/2 22HF-50+60% 50V |
| | 4000411 82pr 5% 50V | | 4000290 22nF 10% 50V |
| C15 C16- | 4000412 100pF 5% 50V | C42 C43 | 4010274 100nF -20+80% 25V |
| C18- | 4000412 100pr 376 50V | C43- | 4010274 100HF -20+80% 23V |
| C19- | 4000420 470pF 5% 50V | C44- | TO 102/2 22/11 -20 TOO /0 30 V |
| C20 | 4/0pi 3/0 300 | C45 | 4010274 100nF -20+80% 25V |
| C21 | 4000416 220pF 5% 50V | C48 | 4010271 10nF 10% 50V |
| C23 | 4000420 470pF 5% 50V | C49 | 4000420 470pF 5% 50V |
| | | _ 10 | |

| 51 | 4010209 47nF 10% 50V | C115 | 4100238 3.3nF 5% 63V 4010265 3.3nF 10% 50V |
|------------|---|----------------|--|
| :52- | 4010274 100nF -20+80% 25\ | / C117 C118 | 4200508 22µF 20% 25V |
| :53 | 4010374 100pE 30+80% 25\ | | 4010274 100nF -20+80% 25V |
| 60 | 4010274 100nF -20+80% 25\ 4000420 470pF 5% 50V | C120 | 4010271 10nF 10% 50V |
| .61 .62 | 4010314 220nF -20+80% 25\ | | 4010274 100nF -20+80% 25V |
| .62 .63 | 4010274 100nF -20+80% 25\ | | 4010314 220nF -20+80% 25V |
| .63 .64 | 4010316 100nF 10% 25V | C124 | 4201256 470µF 20% 25V |
| 65 | 4010321 470nF -20+80% 16\ | | 4130266 82nF 5% 63V |
| 66- | 4010314 220nF -20+80% 25\ | | 4130267 18nF 5% 63V |
| 67 | 4010314 22011 201007023 | C127- | 4010340 150nF 10% 25V |
| 68- | 4000287 220nF -20+80% 25\ | | |
| 70 | | C129 | 4201256 470µF 20% 25V |
| 71 | 4130070 1µF 10% 50V | C130 | 4201171 1µF 20% 50V |
| 72- | 4010316 100nF 10% 25V | C131 | 4200508 22µF 20% 25V |
| 73 | | C132 | 4000408 47pF 5% 50V |
| 74- | 4010220 100nF 10% 50V | C133 | 4201173 10µF 20% 50V |
| 75 | | C134- | 4201171 1µF 20% 50V |
| 76 | 4130070 1µF 10% 50V | C135 | |
| .77 | 4000287 220nF -20+80% 25\ | / C136 | 4200688 47µF 20% 50V |
| 78 | 4000420 470pF 5% 50V | C137 | 4000408 47pF 5% 50V |
| 79 | 4010316 100nF 10% 25V | C138 | 4010316 100nF 10% 25V |
| 080 | 4010321 470nF -20+80% 16\ | / C139 | 4000416 220pF 5% 50V |
| .81 | 4200628 100µF 20% 16V | C140 | 4100322 1nF 1% 63V |
| 282 | 4130070 1µF 10% 50V | C141 | 4200403 100µF 20% 25V |
| 283 | 4130236 330nF 20% 63V | C142 | 4010274 100nF -20+80% 25V |
| 284 | 4000402 15pF 5% 50V | C144 | 4010274 100nF -20+80% 25V |
| 285 | 4100322 1nF 1% 63V | C200 | 4010274 100nF -20+80% 25V |
| 287 | 4000420 470pF 5% 50V | C208 | 4200403 100µF 20% 25V |
| 288 | 4201256 470µF 20% 25V | C213 | 4010324 330nF 10% 16V |
| 289 | 4201417 1000µF 20% 16V | C214 | 4010316 100nF 10% 25V |
| C90 | 4200403 100µF 20% 25V | C216 | 4010272 22nF -20+80% 50∨ |
| C91 | 4010274 100nF -20+80% 25 | √ C217- | 4200824 22µF 20% 50V |
| C92- | 4200508 22µF 20% 25V | C218 | |
| C93 | | C219 | 4200628 100µF 20% 16V |
| C94 | 4201173 10µF 20% 50V | C221 | 4010272 22nF -20+80% 50V |
| C95 | 4010314 220nF -20+80% 25° | | 4201172 4.7μF 20% 50V |
| C96 | 4201173 10µF 20% 50V | C601- | 4010314 220nF -20+80%25V |
| C97 | 4010314 220nF -20+80% 25 | | |
| C98 | 4200628 100µF 20% 16V | C603 | 4000416 220pF 5% 50V |
| C99 | 4000402 15pF 5% 50V | C604 | 4000408 47pF 5% 50V |
| C100 | 4201439 10µF 20% 25V | C605 | 4000461 1nF 5% 50V |
| C101 | 4000234 47pF 5% 50V | C606- | 4010273 47nF-20+80% 50V |
| C102 | 4201171 1µF 20% 50V | C608 | 4201163 10µF 20% 35V |
| C103 | 4130070 1µF 10% 50V | C609 | |
| C104 | 4201171 1µF 20% 50V | C610 | 4010264 2.7nF 10% 50V 4010274 100nF -20+80% 25V |
| C105 | 4200672 22µF 20% 16V | C612 | 4010274 100HF-20+80%25V 4000420 470pF5% 50V |
| C106 | 4130313 470nF 20% 63V | C613 | • |
| C107 | 4201170 0.47µF 20% 50V | C615 | 4010271 10nF 10% 50V 4010274 100nF -20+80% 25V |
| C108- | 4201171 1µF 20% 50V | C616 | |
| C109 | 1000107 45 550/ 50/ | C617 | 4000424 1nF 5% 50V |
| C110 | 4000402 15pF 5% 50V | C618 | 4010267 4.7nF 10% 50V 4201164 47µF 20% 10V |
| C112 | 4000416 220pF 5% 50V | C619- C620 | 4201104 4/µF 20% 10V |
| C113 | 4000412 100pF 5% 50V | | 4010265 3.3nF 10% 50V |
| C114 | 4000416 220pF 5% 50V | C621 | 4010263 3.311 10 / 0 300 |
| | 0024422 Coil 4 42MU- | 1.7 | 8021081 Coil 4.7µH 10% |
| L1 | 8021132 Coil 4.43MHz 8020822 Coil 3.3µH 5% | L7 L8 | 8020907 Coil 47µH 10%1 - 2A |
| L2- | ου20022 COII 3.5μπ 576 | L8 L9 | 8021128 Coil 560µH |
| L4 L5- | 8020916 Coil 47µH 5% 450 | | 8021082 Coil 8.2µH 10% |
| L6 | 8020310 CON 47 pr 1 370 4300 | L601 | 8021082 Coil 8.2µH 10% |
| LO | | 2001 | 8021002 Con 0.2411 703 |
| | 0000407 | | |
| X1 | 8090197 Crystal 4.433619M | | |
| X2 | 8090226 Crystal 3.579545M | iHz | |
| | | | |
| P29- | 7229141 Socket 10 pole | | |
| P33 | | | |
| | 7771177 Diua 9/9 nola | | |
| P34 P35 | 7221133 Plug 8/8 pole 7221121 Plug 16/16 pole | | |



Resistors not referred to are standard, see page 3-27

PCB 3, 8008364 Video Output

| TR1- | 8320961 | 17 | BF 421 | TR51 | 8320497 | 18 | BC 547B |
|-------------|---------|------|-----------------|------|---------|-------|------------|
| TR3 | | | | TR52 | 8320503 | 18 | BC 557B |
| TR4- | 8320962 | 43 | BF 871 | TR53 | 8321115 | 43 | BD 830 |
| TR6 | | | | TR54 | 8321114 | 43 | BD 829 |
| | 3358282 | | Heat sink | TR55 | 8320755 | 51 | BC 847B |
| | | | f/TR4-6 | TR56 | 8320811 | 51 | BC 857B |
| | 3152902 | | Holder f/TR4-6 | | | | |
| D1- | 8300865 | 209 | BAV 21 | D51- | 8300606 | 250 | LL 4448 |
| D4 | | | | D52 | | | |
| D5- | 8300058 | 209 | 1N 4148 | D53 | 8300058 | 209 | 1N 4148 |
| D16 | | | | D54- | 8300482 | 250 | LL 4148 |
| D19- D21 | 8300058 | 209 | 1N 4148 | D58 | | | |
| R1- | 5021395 | 8.2K | Ω 5% 3W | R60- | 5021225 | 10ΚΩ | 2 1% 1/4W |
| R3 | | | | R61 | | | |
| R10- | 5001167 | 2.2K | Ω 10% 1/2W | R69- | 5011631 | 1ΚΩ | 1% 1/4W |
| R12 | | | | R70 | | | |
| R18 | | | 10% 0.3W | R73- | 5021490 | 28Ω | 1% 1/4W |
| R19 | | | Ω 5% 1/3W | R74 | | | |
| R52 | | | 2 1% 1/4W | R76 | 5020345 | 47Ω | 10% 0.3W |
| R54 | 5021225 | 10Ks | 2 1% 1/4W | | | | |
| C1- | 4000153 | 33pF | 5% 50V | C55- | 4130070 | 1µF 1 | 10% 50V |
| C3 | | | | C56 | ******* | 400 | 5 400/ 53V |
| C4 | | | F 20% 400V | C57 | | | F 10% 63V |
| C5 | | | F-0+100% 2000V | C59- | 4200628 | 100μ | F 20% 16V |
| C6 | | | F 20% 25V | C60 | 4704700 | 100 | r 200/ 62% |
| C7 | | | F 10% 63V | C61 | | | F 20% 63V |
| C51- | 4130230 | 100n | F 20% 63V | C62 | | • | 20% 16V |
| C52 | 4040330 | 100 | E 100/ E01/ | C63 | 4010220 | iuun | F 10% 50V |
| C53- | 4010220 | Tour | F 10% 50V | | | | |
| C54 | | | | | | | |
| | | | | | | | |
| L1 | 8020590 | Coil | 270µH 10% | | | | |
| P10 | 7200119 | Sock | et picture tube | | | | |
| P37 | 7221133 | Plug | 8/8 pole | | | | |
| P38 | 7221079 | Plug | 7/7 pole | | | | |
| P40 | 7221043 | Plug | 3/3 pole | | | | |
| | | _ | tact pin | | | | |

| PCB 4, | 8008365 | Power | Supply |
|--------|---------|--------------|--------|
|--------|---------|--------------|--------|

| IC1- IC2 | 8330297 136 | CNY 17F2ZW | IC3 | 8330234 | 136 | CNY 17-2ZV | V |
|--|---|---|---|--|--|--|-------------|
| TR2 | 8320503 18 | BC 557B | TR84 | 8320503 | 18 | BC 557B | |
| TR3 | 8320497 18 | BC 547B | TR85 | 8320552 | 18 | BC 327-25 | |
| TR41∆ | 8321078 72 | STH 7N90FI | TR86 | 8320497 | 18 | BC 547B | |
| | 2816154 | Spring clip | TR91- | 8320497 | 18 | BC 547B | |
| TR51 | 8320503 18 | BC 557B | TR92 | | | | |
| TR52 | 8320497 18 | BC 547B | TR93 | 8320503 | 18 | BC 557B | |
| TR53 | 8320503 18 | BC 557B | TR111 | 8320946 | 67 | IRF Z24 | |
| TR61 | 8320497 18 | BC 547B | TR122 | 8320853 | 67 | IRF 624 | |
| TR62 | 8320503 18 | BC 557B | TR124 | 8320497 | 18 | BC 547B | |
| TR63 | 8320625 23 | BF 240 | TR141 | 8320503 | 18 | BC 557B | |
| TR81 | 8320503 18 | BC 557B | TR142 | 8320497 | 18 | BC 547B | |
| TR82- TR83 | 8320497 18 | BC 547B | TR161 TR162 | 8320497 8320503 | 18 18 | BC 547B BC 557B | |
| | 8200001 | Dridge | D113 | 8300058 | 209 | 1N 4148 | |
| D1 | 8300901 8300201 209 | Bridge Z6.2V 5% 0.4W | D113 | 8300310 | | Z10V 5% 0. | 4W |
| D3 D15 | 8300201 209 | 1N 4148 | D114 | 8300776 | 40 | BYW 29F | -711 |
| D41- | 8300902 221 | BYV 26C | 0121 | 2816195 | | Spring clip | |
| D42 | 0300302 221 | D1 V 20C | D122 | 8300058 | 209 | 1N 4148 | |
| D43- | 8300675 209 | BYV 26B | D123 | 8300671 | | RGP 10B | |
| D44 | 03000.5 202 | 2 | D124 | 8300058 | | 1N 4148 | |
| D51 | 8300671 209 | RGP 10B | D125 | 8300310 | 209 | Z10V 5% 0. | 4W |
| D61 | 8300058 209 | 1N 4148 | D127 | 8300310 | 209 | Z10V 5% 0. | 4W |
| D81- | 8300058 209 | 1N 4148 | D141 | 8300310 | 209 | Z10V 5%0. | .4W |
| D83 | | | D142- | 8300058 | 209 | 1N 4148 | |
| D92- | 8300058 209 | 1N 4148 | D143 | | | | |
| D93 | | | D144 | 8300903 | | Z6.2V 1% | |
| D101 | 8300784 221 | BYW 96D | D162 | 8300058 | | 1N 4148 | |
| D102 | 8300670 221 | BYV 26D | D163 | 8300201 | | Z6.2V 5% C |).4W |
| D103 | 8300671 209 | RGP 10B | D164 | 8300058 | 209 | 1N 4148 | |
| D111 | 8300388 209 | RGP 30P | | | | | |
| D112 | 8300776 40 2816195 | BYW 29F Spring clip | | | | | |
| ST051 | 8300320 207 | BTB 06 | - | | | | |
| R9 | 5011209 10M | Ω 5% 1/2W | R144 | 5020183 | 4649 | 2 1% 1/4W | |
| R10 | 5011378 0.82 | | R148 | 5021186 | 4429 | 2 1% 1/4W | |
| R51 | 5230030 PTC | 18+3000Ω 265V | R150 | | | (Ω 0.25% 1/4 | |
| R59 | 5024005 15Ω | | R151 | 5021481 | 15K9 | Ω 0.25% 1/4 V | V |
| R103 | 5020714 0.1Ω | 10% 0.4W | | | | | |
| C1 | 4130169 47nl | | C93 | | | 10% 50V | |
| C4 | 4201273 150 | | C94 | | | oF 5% 63V | |
| C5- | 4010240 2.2n | F 20% 400V | C95 | | | F 10% 50V | |
| C6 | ******** | | C101- | 4010104 | 220 | oF 10% 50€ | |
| C7 | 4130169 47nl | | C102 | 4201274 | 100 | uF 20% 38∜ | |
| C20 C42- | 4201173 10µl 4010104 220 _l | | C103 C104 | | | F 20% 250V | |
| C42- | 4010104 220 | DF 10 76 300 V | C104 | | | μF 20% 25 | |
| C44 | 4130570 4 7r | F 20% 1000V | C105 | | | 10% 50V | |
| C45 | | F -20+80% 40V | C111 | | | nF 20% 63 | |
| C49 | 4010346 100 | | C112 | | | µF 20% 63∤ | |
| C50 | 4010105 1nF | | C113 | | | 10% 50V | |
| | 4130098 100 | | C114 | 4200612 | | 0µF -20+50% | 25 V |
| C51 | | E 400/ 531/ | C115 | | • | F 20% 50V | |
| C51 C52 | 4130304 22n | F 10% 63V | | | 1nF | 10% 50V | |
| C52 C53 | 4130304 22n 4130230 100 | | C121 | | | | _ |
| C52 C53 C54 | 4130230 100 4200688 47µ | nF 20% 63V F 20% 50V | C122 | 4200612 | 100 | 0μF -20+50% | |
| C52 C53 C54 C55 | 4130230 100 4200688 47µ 4200628 100 | nF 20% 63V F 20% 50V µF 20% 16V | C122 C123 | 4200612 4201328 | 100 330 | 0μF -20+50% 0μF 20% 10 / | |
| C52 C53 C54 C55 C61 | 4130230 100 4200688 47µ 4200628 100 4010328 470 | nF 20% 63V F 20% 50V µF 20% 16V pF 10% 1KV | C122 C123 C124 | 4200612 4201328 4130230 | 100 330 100 | 0μF -20+50% 0μF 20% 16 / nF 20% 63/ | |
| C52 C53 C54 C55 C61 C62 | 4130230 100 4200688 47µ 4200628 100 4010328 470 4100235 680 | nF 20% 63V F 20% 50V µF 20% 16V pF 10% 1KV pF 5% 63V | C122 C123 C124 C125- | 4200612 4201328 4130230 | 100 330 100 | 0μF -20+50% 0μF 20% 10 / | |
| C52 C53 C54 C55 C61 C62 C63 | 4130230 100 4200688 47µ 4200628 100 4010328 470 4100235 680 4130230 100 | nF 20% 63V F 20% 50V µF 20% 16V pF 10% 1KV pF 5% 63V nF 20% 63V | C122 C123 C124 C125- C126 | 4200612 4201328 4130230 4010105 | 100 330 100 1nF | 0μF -20+50% 0μF 20% 16√ nF 20% 63∤ 10% 50V | |
| C52 C53 C54 C55 C61 C62 C63 C82 | 4130230 100 4200688 47µ 4200628 100 4010328 470 4100235 680 4130230 100 4000168 120 | nF 20% 63V F 20% 50V µF 20% 16V pF 10% 1KV pF 5% 63V nF 20% 63V pF 5% 63V | C122 C123 C124 C125- C126 C141 | 4200612 4201328 4130230 4010105 | 100 330 100 1nF | 0μF -20+50% 0μF 20% 1₀ν nF 20% 63∜ 10% 50V oF 5% 50V | |
| C52 C53 C54 C55 C61 C62 C63 | 4130230 100 4200688 47µ 4200628 100 4010328 470 4100235 680 4130230 100 | nF 20% 63V F 20% 50V µF 20% 16V pF 10% 1KV pF 5% 63V nF 20% 63V pF 5% 63V | C122 C123 C124 C125- C126 | 4200612 4201328 4130230 4010105 4000153 4200517 | 100 330 100 1nF 33p 2.2 | 0μF -20+50% 0μF 20% 16√ nF 20% 63∤ 10% 50V | |

[△] indicates that static electricity may destroy the component

| 17 | 35 | 51 | 67 | 146 | 150 | 209 | 221 |
|-------|----------|----|-------------------|---------------|-----------|----------------|-----------------------|
| B C E | O B C E | | O III G D S | 0 1 - | 1- | <u>a</u> | <u></u> 4 |
| 250 | 260 | | 7-001 | Particular Co | 10 months | Walle State To | graphs for some graph |
| C | ES 3X | | | | | | |

Resistors not referred to are standard, see page 3-27

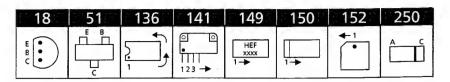
| L41 L42 L51 | 8022347 Coil 260μH 8020551 Coil 4.7μH 10% 8020912 Coil 100μH 10% | L91 L101 | 6850209 Coil 0.5μΗ 8021015 Coil 1μΗ 10% |
|-------------------|--|-------------|--|
| FE2 | 6710036 Ferrite core | FE6- | 6710036 Ferrite core |
| FE3- | 6710034 Ferrite core | FE7 | |
| FE4 | | FE8 | 6710031 Ferrite core |
| FE5 | 6710031 Ferrite core | | |
| T1 | 8014139 Transformer | | |

| P41- | 7229141 | Holder f/ribbon cable | P44 | 7221044 | Plug 4/4 pole |
|------|---------|-----------------------|-----|---------|---------------|
| P42 | | 10 pole | P45 | 7211101 | Plug 4 pole |
| P43 | 7221046 | Plug 6/6 pole | P46 | 7221057 | Plug 2/3 pole |

| PCB 5, | 8008839 | Deflection | n & EHT |
|--------|---------|------------|---------|
|--------|---------|------------|---------|

| | , | | p | | | 3 | ' |
|-------|---------|------|-------------|-------|---------|------|--------------|
| IC1 | 8341041 | 150 | LM 324 | IC200 | 8341098 | 150 | LM 358 |
| IC50 | 8340794 | 146 | TDA 8172 | | | | |
| | 2816195 | | Spring clip | | | | |
| TR1 | 8320755 | 51 | BC 847B | TR100 | 8320811 | 51 | BC 857B |
| TR20 | 8320811 | 51 | BC 857B | TR101 | 8320755 | 51 | BC 847B |
| TR21 | 8320755 | 51 | BC 847B | TR120 | 8321102 | 35 | BU 2508AX |
| TR22 | 8320609 | 51 | BC 808-25 | | 2816154 | | Spring clip |
| TR30 | 8320755 | 51 | BC 847B | TR121 | 8321100 | 67 | STP 10NA40FI |
| TR70 | 8320755 | 51 | BC 847B | | 2816195 | | Spring clip |
| TR71 | 8320811 | 51 | BC 857B | TR130 | 8320755 | 51 | BC 847B |
| TR72 | 8320752 | 51 | BC 817-40 | TR131 | 8320853 | 67 | STP 5N30FI |
| TR73 | 8320811 | 51 | BC 857B | TR132 | 8320505 | 17 | BF 422 |
| TR74- | 8320755 | 51 | BC 847B | | | | |
| TR75 | | | | | | | |
| D20 | 8300482 | 250 | LL 4148 | D78- | 8300482 | 250 | LL 4148 |
| D30- | 8300482 | 250 | LL 4148 | D79 | | | |
| D31 | | | | D110- | 8300482 | 250 | LL 4148 |
| D50 | 8300992 | 209 | RGF 1G | D111 | | | |
| D60 | 8300992 | 209 | RGF 1G | D120- | 8301030 | 260 | RS 3J |
| D61 | 8301030 | 260 | RS 3J | D121 | | | |
| D62 | 8300992 | 209 | RGF 1G | D122- | 8300304 | 221 | BY 228 |
| D63- | 8301030 | 260 | RS 3J | D123 | | | |
| D64 | | | | D124 | 8300605 | | Z10V 5% 0.5W |
| D65 | 8300992 | | RGF 1G | D130- | 8300482 | 250 | LL 4148 |
| D70- | 8300482 | 250 | LL 4148 | D131 | | | |
| D75 | | | | D132 | 8300992 | | |
| D76- | 8300992 | 209 | RGF 1G | D133 | 8300605 | | |
| D77 | | | | D200 | 8300482 | 250 | LL 4148 |
| R3 | 5021226 | 1006 | (Ω 1% 1/4W | R32 | 5023051 | 56K | Ω1% 1/4W |
| R4 | 5023046 | 8.87 | KΩ 1% 1/4W | R35 | 5023032 | 3.31 | 1Ω1% 1/4W |
| R16 | 5023052 | 470k | (Ω 1% 1/4W | R39- | 5011631 | 1ΚΩ | 1% 1/4W |
| R21 | 5012192 | 6.8K | Ω 1% 1/4W | R40 | | | |
| R30 | 5012311 | 464 | Ω 1% 1/10W | | | | |

| R41- | 5021542 0.22Ω 5% 1/4W | R114 | 5023041 15KΩ 1% 1/4W |
|-------------|---|---------------|---|
| R42 | F043403 | R118 | 5012124 51KΩ 1% 1/4W |
| R44 | 5012192 6.8KΩ 1% 1/4W | R120 | 5024003 47Ω |
| R45 R50- | 5021225 10KΩ 1% 1/4W 5011633 820Ω 5% 1/4W | R121 R122- | 5390033 100MΩ 5020110 10KΩ 1% 1/4W |
| 350- 351 | JU 1 1 1 2 0 2 0 2 0 2 0 1 1 4 VV | R123 | 5520110 15138170 1711 |
| R52- | 5021225 10KΩ 1% 1/4W | R125- | 5021542 0.22Ω 5% 1/4W |
| R53 | | R126 | |
| R54 | 5011852 332Ω 1% 1/4W | R132- | 5021520 10Ω 1% 1/4W |
| R55 | 5011755 1Ω 2% 1/4W | R133 | |
| R56 | 5021151 1.5Ω 1% | R134 | 5011852 332Ω 1% 1/4W |
| R57 | 5011631 1KΩ 1% 1/4W | R135 | 5021513 0.47Ω 5% 1/4W |
| R58 | 5011755 1Ω 2% 1/4W | R145 | 5021520 10Ω 1% 1/4W 5023052 470KΩ 1% 1/4W |
| R80 | 5023041 15KΩ 1% 1/4W | R148 | 5012200 2.2KΩ 1% 1/4W |
| R83 R89 | 5011632 1.5KΩ 1% 1/4W 5021225 10KΩ 1% 1/4W | R149 R153 | 5023034 680KΩ 1% 1/4W |
| R100 | 5021528 18KΩ 1% 1/4W | R200 | 5021225 10KΩ 1% 1/4W |
| R107 | 5011631 1KΩ 1% 1/4W | R202 | 5023035 560KΩ 1% 1/4W |
| R111 | 5012169 220KΩ 1% 1/4W | R203 | 5023045 12KΩ 1% 1/4W |
| R112 | 5023033 270KΩ 1% 1/4W | R824 | 5012169 220KΩ 1% 1/4W |
| R113 | 5023052 470KΩ 1% 1/4W | | |
| V2 | 5012200 2.2ΚΩ 1/4Ω | | |
| C1 | 4010271 10nF 10% 50V | C71 | 4010271 10nF 10% 50V |
| C2 | 4000461 1nF 5% 50V | C72 | 4000461 1nF 5% 50V |
| C3 | 4010271 10nF 10% 50V | C73 | 4000290 22nF 10% 50V |
| C6 | 4010267 4.7nF 10% 50V | C74 | 4201311 22µF 20% 100V |
| C7 | 4010263 2.2nF 10% 50V | C75 | 4000418 330pF 5% 50V |
| C8 | 4000420 470pF 5% 50V | C100 | 4010263 2.2nF 10% 50V |
| C9 | 4000461 1nF 5% 50V | C101 | 4000420 470pF 5% 50V |
| C10 | 4000416 220pF 5% 50V | C102 C104 | 4010267 4.7nF 10% 50V 4000420 470pF 5% 50V |
| C11 C12 | 4010316 100nF 10% 25V 4000412 100pF 5% 50V | C104 | 4130601 1µF 5% 100V |
| C12 C14 | 4010316 100pF 5% 50V | C112 | 4130234 470nF 10% 63V |
| C14 | 4010271 10nF 10% 50V | C112 | 4010263 2.2nF 10% 50V |
| C20 | 4010267 4.7nF 10% 50V | C114- | 4010346 100pF 10% 2KV |
| C21 | 4010263 2.2nF 10% 50V | C115 | |
| C30- | 4010271 10nF 10% 50V | C116 | 4130596 15nF 20% 400V |
| C31 | | C120 | 4100316 4.3nF 5% 2KV |
| C32 | 4010316 100nF 10% 25V | C121 | 4100317 12nF 5% 2KV |
| C33 | 4010263 2.2nF 10% 50V | C122 | 4130576 3.3nF 5% 630V |
| C50- | 4011033 220nF 5% 25V | C130 | 4100318 20nF 5% 630V |
| C51 | 4420222 220 5 200 52 | C131 | 4130475 1µF 10% 250V |
| C52 | 4130233 220nF 20% 63V | C132 | 4010347 1nF 10% 500V 4100319 390nF 5% 250/4)OV |
| C53 | 4201309 100µF 20% 63V | C133- | 4100319 390NF 3% 230/41/OV |
| C54 C55- | 4200512 1µF 20% 50V 4000418 330pF 5% 50V | C134 C136 | 4130580 220nF 5% 250V |
| C56 | 4000410 330pi 370 30V | C130 | 4010267 4.7nF 10% 50V |
| C60 | 4201309 100µF 20% 63V | C200 | 4011033 220nF 5% 25V |
| C61- | 4201424 470µF 20% 25V | C201 | 4010263 2.2nF 10% 50V |
| C64 | | C202- | 4010316 100nF 10% 25V |
| C65 | 4201309 100µF 20% 63V | C204 | |
| C70 | 4000431 2.2nF 2% 50V | | |
| L60 | 8020916 Coil 47µH 5% 450mA | L131 | 8021000 Coil 3.3µH 20% |
| L120 | 8021088 Coil 47µH | L132 | 8024056 Coil |
| L130 | 8020901 Coil 10mH 10% 70mA | L133 | 8024072 Coil 2.6mH 5% 🗚 |
| T70 | 8014138 Transformer | T121 | 8024057 Transformer |
| T120 | 8014136 Transformer EHT | | |
| \$130 | 7400439 Switch 1 pole | | |
| P48 | 7221120 Socket 14/14 pole | P50 | 7221079 Socket 7/7 pole |
| F40 | | | |



Resistors not referred to are standard, see page 3-27

PCB 6, 8008873 Main Microcomputer

| IC1*Δ | 8342983 152 | 27C040 | IC4∆ | 8341576 1 | 152 | EEPROM 28C64 |
|-------|--------------------|--------|------|-----------|-----|--------------|
| | | | | | | |

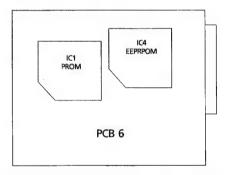
EEPROM 6IC4

The following general data is stored in the EEPROM (6IC4):

- Program nos. (tuning data)
- Teletext memory (teletext pages per program no.)
- Preset values for sound and picture
- Timer Record data
- Timer Play data
- Geometry adjustment data
- Various setup data

When replacing 6IC4 all data will be lost. Concerning adjustment data and preset values, some default values are stored in the PROM IC (6IC1).

When replacing the electrical chassis PCB6 or PCB14 where PCB6 is mounted, the EEPROM should be moved to the new PCB to avoid loss of data.



PCB 7, 8008867 Teletext Processing

PCB 10,8008369 Sound Output

| 8350088 14 | I1 STK 4122-2 | | | | | |
|--------------------|---|---|--|--|--|--|
| 8320497 1 | 18 BC 547B | TR5- | 8320755 | 51 | BC 847B | |
| 8320503 1 | 18 BC 557B | TR8 | | | | |
| 8320993 5 | 1 FMMT 589TA | TR9- | 8320811 | 51 | BC 857B | |
| | | TR11 | | | | |
| 8300482 2 5 | 50 LL 4148 | D10- | 8300772 | 250 | Z24V 5% 0. | 4W |
| 8300482 25 | 50 LL 4148 | D11 | | | | |
| | | | | | | |
| 8300605 25 | 50 Z10V 5% 0.5W | | | | | |
| | | | | | | |
| | | R58- | 5370402 | 2.2K | Ω30% 0.3W | |
| 5021301 10 |)KΩ 1% 1/8W | R59 R500 | 8008151 | NTC | resistor | |
| 4010267 4. | 7nF 10% 50V | C10- | 4130233 | 220n | F 20% 63V | |
| | | C13 | | | | |
| | | C14 | 4130313 | 470n | F 20% 63V | |
| 4010271 10 | OnF 10% 50V | C15- | 4200510 | 10µF | 20% 16V | |
| | | C16 | | | | |
| | | | | | | |
| 4010274 10 | 00nF -20+80% 25V | C17- | 4200617 | 47µF | 20% 10V | |
| | 8320497 1 8320503 1 8320993 5 8300482 25 8300482 25 8300605 25 5020159 10 5021301 10 | 8320503 18 BC 557B 8320993 51 FMMT 589TA 8300482 250 LL 4148 | 8320497 18 BC 547B TR5- 8320503 18 BC 557B TR8 8320993 51 FMMT 589TA TR9- TR11 8300482 250 LL 4148 D10- 8300482 250 LL 4148 D11 8300605 250 Z10V 5% 0.5W 5020159 100Ω 10% 0.3W R58- 5021301 10KΩ 1% 1/8W R59 R500 4010267 4.7nF 10% 50V C10- 4010263 2.2nF 10% 50V C13 C14 4010271 10nF 10% 50V C15- | 8320497 18 BC 547B TR5- 8320503 18 BC 557B TR8 8320993 51 FMMT 589TA TR9- TR11 8300482 250 LL 4148 D10- 8300482 250 LL 4148 D11 8300605 250 Z10V 5% 0.5W 5020159 100Ω 10% 0.3W R58- 5021301 10KΩ 1% 1/8W R59 R500 8008151 4010267 4.7nF 10% 50V C10- 4130233 4010263 2.2nF 10% 50V C13 C14 4130313 4010271 10nF 10% 50V C15- | 8320497 18 BC 547B TR5- 8320503 18 BC 557B TR8 8320993 51 FMMT 589TA TR9- TR11 8300482 250 LL 4148 D10- 8300482 250 LL 4148 D11 8300605 250 Z10V 5% 0.5W 5020159 100Ω 10% 0.3W R58- 5021301 10KΩ 1% 1/8W R59 R500 8008151 NTC 4010267 4.7nF 10% 50V C10- 4010263 2.2nF 10% 50V C13 C14 4130313 470r 4010271 10nF 10% 50V C15- 4200510 10μF | 8320497 18 BC 547B TR5- 8320503 18 BC 557B TR8 8320993 51 FMMT 589TA TR9- TR11 8300482 250 LL 4148 D10- 8300482 250 LL 4148 D11 8300605 250 Z10V 5% 0.5W 5020159 100Ω 10% 0.3W R58- 5021301 10KΩ 1% 1/8W R59 R500 8008151 NTC resistor 4010267 4.7nF 10% 50V C10- 4130233 220nF 20% 63V 4010263 2.2nF 10% 50V C13 C14 4130313 470nF 20% 63V 4010271 10nF 10% 50V C15- 4200510 10μF 20% 16V |

^{*} specially selected or adapted sample

Δ indicates that static electricity may destroy the component

| | C19- | 4200517 | 2.2µF 20% 50V | C28 | | 100µF 20% 50V |
|---------------------------------------|-------------|----------|--|---------------|---------|------------------------------|
| | C20 | 4200672 | 22 200/ 16\/ Pinolar | C29- C30 | 4201295 | 3300µF 20% 35V |
| | C21 C22 | | 22µF 20% 16V Bipolar 10µF 20% 16V | C31 | 4201143 | 10μF 20% 25V Bipola |
| | C22 C23- | | 47μF 20% 50V | C32 | | 10nF 10% 50V |
| | C23- | 7200000 | 77 pr 2070 30 v | C32- | | 100nF -20+80% 25V |
| | C25- | 4201173 | 10µF 20% 50V | C34 | | |
| | C27 | 4201113 | . од. 20% бот | | | |
| | L1- | 8020907 | Coil 47µH 10% 1.2A | | | |
| | L2 | | | | | |
| | P57 | | Plug 4/4 pole | P77- | 7221044 | Plug 4/4 pole |
| | P58 | | Plug 3 pole | P78 | | |
| | P60 | 7220206 | Plug 5/4 pole | | | |
| CB 11, 8008370 Cross Over etwork | IC1- IC5 | 8341022 | 150 4558 | IC6 | 8341033 | 149 LF 353 |
| | TR1- TR2 | 8320755 | 51 BC 847B | | | |
| | 1112 | | | _ = 0, 20,000 | | |
| | D1 | 8300482 | 250 LL 4148 | | ., | |
| | R41 | 5210017 | LDR/LED Opto | | | |
| | C1- | 4010157 | 10nF 10% 50V | C24 | | 10nF 10% 63V |
| | C2 | | | C25- | 4130306 | 100nF 10% 63V |
| | C3- | 4010173 | 4.7nF 10% 50V | C26 | | 450 5400/ 631/ |
| | C7 | | | C27 | | 150nF 10% 63V |
| | C8 | | 1nF 5% 50V | C28- | 4130308 | 220nF 10% 63V |
| | C9- | 4010274 | 100nF -20+80% 25V | C32 | 4170717 | 470-F 200/ 62V |
| | C20 C21 | 4130240 | 47nF 10% 63V | C33 C34 | | 470nF 20% 63V 1μF 10% 63V |
| | P79- P80 | 7211084 | Socket 4/4 pole | | | |
| CB 12, 8008328 IF System B/G | ΙC1Δ | 8341025 | 150 4094 | IC4Δ | 8342357 | 136 TDA 9815 |
| | D26 | 8300606 | 250 LL 4448 | | | |
| | R112 | 5370455 | 5ΚΩ 20% | R113 | 5370457 | 500Ω 20% |
| | C5 | 4010271 | 10nF 10% 50V | C26- | 4010274 | 100nF -20+80% 25V |
| | C7 | 4010271 | 10nF 10% 50V | C27 | | |
| | C13 | 4010271 | 10nF 10% 50V | C29 | | 22µF 20% 10V |
| | C16- | 4010271 | 10nF 10% 50V | C36 | | 22µF 20% 10V |
| | C17 | | | C52- | 4200847 | 2.2µF 20% 50V |
| | C18 | | 220nF 10% 16V | C53 | | 400 |
| | C19 | | 10nF 10% 50V | C55- | 4000412 | 100pF 5% 50V |
| | C23 C24 | | I 100nF -20+80% 25V 7 2.2μF 20% 50V | C56 C57 | 4010271 | 10nF 10% 50V |
| | 15 | 9021025 | 2 Cail 77 9MU- | | | |
| | L5 | | Coil 77.8MHz | | | |
| | L6- | 80210/9 | 9 Coil 2.2µH 10% | | | |
| | L7 L9 | 8021097 | 2 Coil 8.2µH 10% | | | |
| indicates that static electricity may | LJ | 302 1002 | υ του οιεμεί 1070 | | | |
| destroy the component | | | | | | |
| | | | | | | |

| | 18 | 515 | 2 2 1 | 36 | 150 | / 250 € | | 10-78 | | |
|---|---|-------------------------------|----------|------------------|------------|-------------|---------|---------------|--------|--|
| | E B C | E B C |] [5] | - | 1-> | A C | | | | |
| | Resistors not referred to are standard, see page 3-27 | | | | | | | | | |
| | BP3 BP5 BP6 | 8030218 8030294 8030295 | Cer. fi | lter 5.5N | ИHZ | BP7- BP8 | 8030296 | Cer. filter 5 | .74MHz | |
| | SW2 | 8030319 | OFW (| G3354K | | | | | | |
| PCB 12, 8008329 IF System I | BP9 | 8030297 | Cer. fi | lter 6.0N | ЛНz | | | | | |
| | SW2 | 8030318 | OFW J | 13351K | | | | | | |
| | Other ele | ctrical part | s like I | PCB 12, I | F System E | 3/G | | | | |
| PCB 12, 8008332 IF System B/G/L/L' | TR6 TR10- TR12 | 8320554 8320755 | | | 3 | | | | | |
| | D15 D17- D18 | 8300635 8300635 | | BA 683 BA 683 | | | | | | |
| | C2- C4 C9 | 4010271 4010271 | | | | C14- C15 | 4010271 | 10nF 10% | 50V | |
| | SW1 SW2 | 8030244 8030316 | | | | SW3 | 8030317 | OFW G935 | зм | |
| | Other ele | ctrical part | ts like | PCB 12, | IF System | B/G | | | | |
| PCB 12, 8008331 IF System B/G/L/L'/I | TR6 TR10- TR12 | 8320554 8320755 | | | В | | | | | |
| | D15 D17- D18 | 8300635 8300635 | | | | | | | | |
| | C2- C4 | 4010271 | 10nF | 10% 50 | V | C14- C15 | 4010271 | 10nF 10 % | 50V | |
| | C9 | 4010271 | 10nF | 10% 50 | V | | | | | |
| | BP9 | 8030297 | Cer. | filter 6.0 | MHz | | | | | |
| | SW1 SW2 SW3 | 8030244 8030316 8030317 | OFW | K3953N | 1 | | | | | |
| | Other el | ectrical pai | ts like | PCB 12, | IF System | B/G | | | | |
| | | | | | | | | | | |

| PC | B . | 12, | 80 | 083 | 30 |
|----|-----|-----|----|-----|----------|
| IF | Sy | ste | m | B/G | /D/K/M/I |

| ΙC1Δ | 8341025 | 150 | 4094 | IC4∆ | 8342357 | 136 | TDA 9815 |
|------------|----------------------------------|----------------------------|--------------------|------|---------|----------|---------------|
| TR6 | 8320554 | 18 | BF 199 | | | | |
| TR7 | 8320752 | 51 | BC 817-40 | | | | |
| TR10- | 8320755 | 51 | BC 847B | | | | |
| TR12 | | | | | | | |
| TR16 | 8320755 | 51 | BC 847B | | | | |
| D11 | 8300635 | 250 | BA 683 | D20- | 8300635 | 250 | BA 683 |
| D15 | 8300635 | 250 | BA 683 | D21 | | | |
| D17- | 8300635 | 250 | BA 683 | D25 | 8300635 | 250 | BA 683 |
| D18 | | | | D26 | 8300606 | 250 | LL 4448 |
| R112 | 5370455 | 5ΚΩ | 20% | | | | |
| R113 | 5370457 | 500Ω | 20% | | | | |
| C1- | 4010271 | 10nF | 10% 50V | C23 | 4010274 | 100n | F -20+80% 25V |
| C5 | | | | C24 | | | F 20% 50V |
| C7 | 4010271 | 10nF | 10% 50V | C26- | 4010274 | 100n | F -20+80% 25V |
| C8 | 4010274 | 100n | F-20+80% 25V | C27 | | | |
| C9- | 4010271 | 10nF | 10% 50V | C29 | | | 20% 10V |
| C10 | | | | C36 | 4201219 | 22µF | 20% 10V |
| C11 | 4010274 | 100n | F-20+80% 25V | C52- | 4200847 | 2.2μ | F 20% 50V |
| C12- | 4010271 | 10nF | 10% 50V | C53 | | | |
| C17 | | | | C55- | 4000412 | 100p | F 5% 50V |
| C18 | | | F 10% 16V | C56 | | | |
| C19 | 4010271 | 10nF | 10% 50V | C57 | 4010271 | 10nF | 10% 50V |
| L5 | | | 77.8MHz | | | | |
| L6- | 8021079 | Coil | 2.2µH 10% | | | | |
| L7 | | | | | | | |
| L9- L10 | 8021082 | Coil | 8.2µH 10% | | | | |
| BP1 | 8030124 | Cer. | filter 4.5MHz ±60 | KHz | | | |
| BP2 | 8030173 Cer. filter 6.5MHz ±8KHz | | | Hz | | | |
| BP3 | 8030218 | 8030218 Cer. filter 5.5MHz | | | | | |
| BP5 | 8030294 | 8030294 Cer. filter 5.5MHz | | | | | |
| BP6 | 8030295 | 8030295 Cer. filter 5.5MHz | | | | | |
| BP7- | 8030296 | Cer. | filter 5.74MHz | | | | |
| BP8 | | | | | | | |
| BP9 | 8030297 | Cer. | filter 6.0MHz ±80 | KHz | | | |
| BP10 | 8030309 | Cer. | filter 4.5MHz | | | | |
| | | | 4.4 | - | | | |
| SW1 | 8008319 | Sub | module | | | | |
| SW1 SW2 | | | module V K3953M | | | | |
| | 8030316 | OFV | | | | | |

| 18 | 19 | 51 | 136 | 150 | 151 | 152 | 209 |
|-------------|-------|----------------------|-------|------------|----------|-----|----------|
| E B C | C B E | E B C | ? | 1- | و | •1 | <u> </u> |
| 224 | 250 | To the second of the | F-55 | 12 -05 | 1:77.75 | 7 3 | |
| A L C | C | | | | | | |

Resistors not referred to are standard, see page 3-27

PCB 14, 8008834 AV Switch (incl. PCB 6) See page 3-10 regarding PCB 6

| IC100∆- | 8342346 | 136 | GM 62093 | IC255∆ | 8341024 | 150 | 4066 |
|----------------|--------------------|-----|--------------------|----------------|--------------------|-------------|----------------|
| IC101Δ | | - | | IC500Δ | 8342349 | | TEA 5114A |
| C102- | 8341022 | 150 | 4558 | IC501∆- | 8342347 | | TEA 6425 |
| C108 | | | | IC503∆ | | | |
| IC111- | 8341857 | 151 | LM 339 | IC701 | 8341857 | 15 1 | LM 339 |
| IC112 | | | | IC702 | 8342567 | 165 | ZR 431 |
| IC130∆- | 8341025 | 150 | 4094 | IC703- | 8341857 | 151 | LM 339 |
| IC131∆ | | | | IC704 | | | |
| IC200- | 8341022 | 150 | 4558 | IC706 | 8341747 | 150 | TL 7705BCD |
| IC206 | | | | IC707*∆ | 8342648 | 152 | 83C524 |
| IC207∆- | 8341024 | 150 | 4066 | | 7200135 | | Socket 44 pole |
| IC209∆ | | | | IC708∆ | 8342397 | 150 | MK 41T56 |
| IC250 | 8342350 | 136 | TDA 7314S | IC710 | 8341257 | 150 | 74HC4052 |
| IC252- | 8341022 | 150 | 4558 | IC711∆ | 8342500 | 150 | ML ASIC DATA |
| IC254 | | | | | | | |
| TR1 | 8321072 | 19 | ZTX 690B | TR510 | 8320811 | 51 | BC 857B |
| TR2 | 8320755 | 51 | BC 847B | TR511 | 8320755 | 51 | BC 847B |
| TR3- | 8320507 | 18 | BC 337-25 | TR512 | 8320811 | 51 | BC 857B |
| TR4 | | | | TR513 | 8320755 | 51 | BC 847B |
| TR5 | 8320811 | 51 | BC 857B | TR514 | 8320778 | 51 | BC 858C |
| TR6- | 8320552 | 18 | BC 327-25 | TR515- | 8320755 | 51 | BC 847B |
| TR7 | | | | TR516 | | | |
| TR8- | 8320755 | 51 | BC 847B | TR517 | 8320755 | 51 | BC 847B |
| TR10 | | | | TR518 | 8320811 | 51 | BC 857B |
| TR11 | 8320811 | 51 | BC 857B | TR519- | 8320755 | 51 | BC 847B |
| TR14- | 8320755 | 51 | BC 847B | TR520 | | | |
| TR15 | | | | TR521- | 8320811 | 51 | BC 857B |
| TR16 | 8320811 | 51 | BC 857B | TR522 | | | |
| TR200 | 8320811 | 51 | BC 857B | TR523- | 8320755 | 51 | BC 847B |
| TR201 | 8320755 | 51 | BC 847B | TR527 | | | |
| TR202 | 8320811 | 51 | BC 857B | TR528 | 8320503 | 18 | BC 557B |
| TR203 | 8320755 | 51 | BC 847B | TR529 | 8320755 | 51 | BC 847B |
| TR250- | 8320936 | 51 | BC 847C | TR530 | 8320497 | 18 | BC 547B |
| TR251 | | | | TR534- | 8320497 | 18 | BC 547B |
| TR252 | 8320811 | 51 | BC 857B | TR535 | | | 0.000 |
| TR253 | 8320755 | 51 | BC 847B | TR716 | 8320755 | | BC 847B |
| TR500 | 8320552 | 18 | BC 327-25 | TR719 | 8320811 | 51 | BC 857B |
| TR501 | 8320755 | 51 | BC 847B | TR720 | 8321050 | | ZTX 788B |
| TR502- | 8320552 | 18 | BC 327-25 | TR721 | 8320755 | | BC 847B |
| TR504 | 0220755 | F-4 | DC 0475 | TR722 | 8320811 | 51 | BC 857B |
| TR505- | 8320755 | 51 | BC 847B | TR723 | 8320755 | | BC 847B |
| TR507 | 0220044 | E4 | DC 0570 | TR724 | | | BC 857B |
| TR508 TR509 | 8320811 8320755 | | BC 857B BC 847B | TR727 TR728 | 8321159 8320811 | | |
| D1- | 8300606 | 250 | LL 4448 | D15- | 8300644 | 250 | Z6.2V 2% 0.5V |
| D4 | | | | D18 | | | |
| D5- | 8300636 | 250 | Z7.5V 5% 0.5W | D19 | 8300562 | 250 | Z5.6V 2% 0.5V |
| D6 | | | | D20- | 8300606 | | |
| D7- | 8300606 | 250 | LL 4448 | D24 | | | |
| D8 | | | | D100- | 8300664 | 250 | Z27V 5%0.5W |
| D9 | 8300762 | 250 | Z9.1V 2% 0.5W | D123 | | | |
| D10- | | | Z6.2V 2% 0.5W | D200- | 8300606 | 250 | LL 4448 |
| D13 | | | | D201 | | | |
| | | | | | | | |

^{*} specially selected or adapted sample

Δ indicates that static electricity may destroy the component

[·]

| D250- | 8300606 250 L | L 4448 | D723- | 8300914 | 250 | SS 14 |
|-------|----------------------|------------------|-------|-----------|---|------------------|
| D251 | | | D724 | | | |
| D500 | 8300644 250 Z | 6.2V 2% 0.5W | D725 | 8300606 | 250 | LL 4448 |
| D501 | 8300606 250 L | L 4448 | D726 | 8300584 | 250 | Z15V 5% 0.5W |
| D502 | 8300644 250 Z | 6.2V 2% 0.5W | D727 | 8300482 | 250 | LL 4148 |
| D503- | 8300520 224 Z | 6.8V 5% 0.5W | D728 | 8300584 | 250 | Z15V 5% 0.5W |
| D510 | | | D730 | 8300584 | 250 | Z15V 5% 0.5W |
| D511 | 8300606 250 L | 1 4448 | D731 | 8300636 | | |
| D512 | 8300818 250 B | | D732- | 8300606 | | |
| | 8300606 250 L | | D732 | 0300000 | 250 | LL 17110 |
| D513- | 8300000 230 L | L 4440 | D737 | 8300644 | 250 | Z6.2V 2% 0.5W |
| D515 | 0200520 224 7 | C 01/ E0/ 0 E10/ | | 6300044 | 230 | 20.20 2 /0 0.500 |
| D516- | 8300520 224 Z | .0.3V 5% 0.5VV | D740 | 020000 | 250 | 11 4440 |
| D518 | | | D741- | 8300606 | 250 | LL 4440 |
| D519 | 8300606 250 L | | D755 | | | |
| D520- | 8300520 224 Z | 6.8V 5%0.5W | D756- | 8300644 | 250 | Z6.2V 2% 0.5W |
| D522 | | | D757 | | | |
| D700- | 8300606 250 L | L 4448 | D758 | 8300907 | 209 | GF 1B |
| D703 | | | D759- | 8300606 | 250 | LL 4448 |
| D721- | 8300606 250 L | L 4448 | D766 | | | |
| D722 | | | D771 | 8300606 | 250 | LL 4448 |
| | | | | | | |
| | | | | | | |
| R1 | 5021074 680Ω 19 | % 1/4W | R296 | 5021484 | 100Ω | 1% 1/4W |
| R2 | 5021484 100Ω 19 | % 1/4W | R301 | 5021484 | 100Ω | 1% 1/4W |
| R3 | 5021512 220Ω 19 | % 1/4W | R400 | 5021074 | 680Ω | 1% 1/4W |
| R4 | 5012200 2.2ΚΩ 1 | 1% 1/4W | R500- | 5021074 | 680Ω | 1% 1/4W |
| R5 | 5021484 100Ω 1 | | R502 | | | |
| R6 | 5021074 680Ω 1 | | R508 | 5011857 | 4.42K | Ω 1% 1/4W |
| R7 | 5021484 100Ω 1 | | R509 | | | Ω 1% 1/4W |
| R8 | 5021512 220Ω 1 | | R510- | | | 1% 1/4W |
| | 5012200 2.2KΩ 1 | | R512 | 302 (323 | 50032 | 170 17 100 |
| R9 | | | | E021402 | 690 | 10/- 1///\\/ |
| R10 | 5021484 100Ω 1 | % 1/4VV | R513- | 302 1463 | 0012 | I% 1/4W |
| R11 | 5024001 2.2Ω | | R515 | | = | 0 40/ 4/08/ |
| R12 | 5021074 680Ω 1 | | R519 | | | Ω 1% 1/4W |
| R13- | 5021511 470Ω 1 | % 1/4W | R520 | | | 2 1% 1/4W |
| R14 | | | R521- | 5021391 | 75Ω΄ | 1% 1/4W |
| R16- | 5023027 64.9Ω 1 | 1% 1/4W | R526 | | | |
| R17 | | | R527 | 5021521 | 82 Ω ′ | 1% 1/4W |
| R18 | 5021490 28Ω 1% | 6 1/4W | R528 | 5023025 | 91Ω | 1% 1/4W |
| R19- | 5023027 64.9Ω 1 | 1% 1/4W | R531- | 5021484 | 100Ω | 1% 1/4W |
| R20 | | | R532 | | | |
| R21 | 5021490 28Ω 1% | 6 1/4W | R539- | 5021484 | 100Ω | 1% 1/4W |
| R24 | 5021225 10KΩ 1 | | R541 | | | |
| R25 | 5021074 680Ω 1 | | R550 | 5021484 | 1000 | 1% 1/4W |
| R26 | 5021493 3.9KΩ | | R564 | | | Ω 1% 1/4W |
| | 5023028 121Ω 1 | | R582 | | | 1% 1/4W |
| R27- | 5023020 121321 | 70 1/444 | | | | 1% 1/4W |
| R28 | E000000 00 00 00 | 40/ 4/004/ | R584- | 502 139 1 | / 277 | 170 17444 |
| R29 | 5023026 39.2Ω | | R585 | E040000 | 2 214 | 0.40/.4/408/ |
| R30- | 5023028 121Ω 1 | % 1/4W | R588- | 5012200 | 2.2K | Ω 1% 1/4W |
| R31 | | | R589 | | | |
| R32 | 5023026 39.2Ω | 1% 1/4W | R630- | 5011903 | 180Ω | 2 1% 1/4W |
| R36 | 5021225 10KΩ 1 | | R632 | | | |
| R37 | 5021493 3.9KΩ | 1% 1/4W | R634 | | | 2 1% 1/4W |
| R62- | 5021484 100Ω 1 | 1% 1/4W | R638 | | | 21% 1/4W |
| R63 | | | R642 | | | 1% 1/4W |
| R66 | 5021511 470Ω 1 | 1% 1/4W | R646 | 5021484 | 1000 | 21% 1/4W |
| R192- | 5021484 100Ω 1 | 1% 1/4W | R649 | 5021391 | 75Ω | 1% 1/4W |
| R197 | | | R650 | 5021484 | 1000 | 1% 1/4W |
| R204- | 5021391 75Ω 19 | % 1/4W | R654- | 5011903 | 1800 | 21% 1/4W |
| R207 | | | R656 | | | |
| R219- | 5021495 5.9ΚΩ | 1% 1/4W | R660 | 5021483 | 680 | 1% 1/4W |
| R220 | 7021-120 J.JA22 | . , 0 1/ = 0 0 | R673- | | | 2 1% 1/4W |
| R221- | 5021496 11.8KG | O 19/ 1//\A/ | R677 | 5011503 | 1002 | . , /0 ./ |
| | 3021430 11.064 | 44 1 70 1/-+ VV | | E001400 | 600 | 1% 1/4W |
| R224 | E02440F F 0K0 | 10/ 1/014/ | R681 | | | |
| R225- | 5021495 5.9ΚΩ | 1% 1/4VV | R682- | 5011903 | 1802 | 21% 1/4W |
| R226 | | 4.04 4.00.05 | R686 | | | 40/ 4/4\41 |
| R244 | 5021484 100Ω | | R690 | | | 1% 1/4W |
| R246 | 5021484 100Ω | | R692- | 5011903 | 1800 | 21% 1/4W |
| R280 | 5021484 100Ω | | R693 | | | |
| R283 | 5021484 100Ω | 1% 1/4W | R734 | | | <Ω 1% 1/4V/ |
| R287 | 5021484 100Ω | 1% 1/4W | R767 | 5012375 | 34.8 | KΩ 1% 1/1 NW |
| R291 | 5021484 100Ω | 1% 1/4W | R768 | 5012238 | 33K | Ω 1 % 1/10W |
| | | | | | | |

Resistors not referred to are standard, see page 3-27

| R771 | 5021370 28.7KΩ 1% 1/4W | R878- | 5012200 2.2KΩ 1% 1/4W |
|---------------|---|---------------|---|
| R772 | 5012350 27.4KΩ 1%1/10W | R879 | |
| R773 | 5012374 31.6KΩ 1% 1/10W | R880 | 5021492 2.7KΩ 1% 1/4W |
| R785 | 5021370 28.7KΩ 1% 1/4W | R885- | 5012200 2.2KΩ 1% 1/4W |
| R786 | 5012350 27.4KΩ 1%1/10W | R886 | |
| R801 | 5021370 28.7KΩ 1% 1/4W | R887 | 5021492 2.7KΩ 1% 1/4W |
| R802 | 5012350 27.4KΩ 1%1/10W | R898 | 5021484 100Ω 1% 1/4W |
| R806 | 5012240 100KΩ 1% 1/10W | R903 | 5011599 49.9KΩ 1% 1/8W |
| R807 | 5012298 22KΩ 1% 1/10W | R908- | 5021512 220Ω 1% 1/4W |
| R867 | 5011631 1KΩ 1% 1/4W | R911 | |
| R868- | 5011857 4.42KΩ 1% 1/4W | R912 | 5021511 470Ω 1% 1/4W |
| R869 | | | |
| C1- | 4201163 10µF 20% 35V | C250- | 4201292 2.2µF 20% 50V |
| C2 | 1201105 (04) 20,0331 | C251 | |
| C3 | 4200688 47µF 20% 50V | | 4000418 330pF 5% 50V |
| C4 | 4010274 100nF -20+80% 25V | C253 | · |
| C5 | 4201417 1000µF 20% 16V | C254- | 4201292 2.2µF 20% 50V |
| C6 | 4200688 47µF 20% 50V | C255 | · |
| C7 | 4010271 10nF 10% 50V | C256- | 4130633 150nF 5% 63V |
| C8 | 4200688 47µF 20% 50V | C259 | |
| C100 | 4000287 220nF -20+80% 25V | C260- | 4000351 1.5nF 5% 50V |
| C101 | 4000418 330pF 5% 50V | C261 | |
| C102 | 4000287 220nF -20+80% 25V | C262- | 4010271 10nF 10% 50V |
| C103 | 4000418 330pF 5% 50V | C263 | |
| C104 | 4000287 220nF -20+80% 25V | C264- | 4010274 100nF -20+80% 25V |
| C105 | 4000418 330pF 5% 50V | C265 | |
| C106 | 4000287 220nF -20+80% 25V | C266 | 4201403 47µF 20% 16V |
| C107 | 4000418 330pF 5% 50V | C267- | 4201292 2.2µF 20% 50V |
| C108 | 4000287 220nF -20+80% 25V | C270 | 4010274 100nF -20+80% 25V |
| C109 | 4000418 330pF 5% 50V 4000287 220nF -20+80% 25V | C273- C280 | 4010274 100NF -20+80% 25V |
| C110 C111 | 4000287 22011 - 20+80 % 25V 4000418 330pF 5% 50V | C281- | 4010237 1nF 10% 50V |
| C112 | 4000287 220nF -20+80% 25V | C284 | 4010237 1111 1078 300 |
| C112 | 4000418 330pF 5% 50V | C401 | 4000287 220nF 25V |
| C122 | 4000287 220nF -20+80% 25V | C500- | 4200688 47µF 20% 50V |
| C123 | 4000418 330pF 5% 50V | C501 | 1200000 17 p. 2070 000 |
| C124 | 4000287 220nF -20+80% 25V | C502- | 4201163 10µF 20% 35V |
| C125 | 4000418 330pF 5% 50V | C507 | • |
| C126 | 4000287 220nF -20+80% 25V | C508 | 4010274 100nF -20+80% 25V |
| C127 | 4000418 330pF 5% 50V | C509 | 4200688 47µF 20% 50V |
| C128 | 4000287 220nF -20+80% 25V | C510- | 4201163 10µF 20% 35V |
| C129 | 4000418 330pF 5% 50V | C511 | |
| C130 | 4000287 220nF -20+80% 25V | C512 | 4000392 100pF 2% 50V |
| C131 | 4000418 330pF 5% 50V | C513 | 4000397 27pF 2% 50V |
| C132 | 4000287 220nF -20+80% 25V | C514 | 4000424 1nF 5% 50V |
| C133 | 4000418 330pF 5% 50V | C515 | 4010274 100nF -20+80% 25V |
| C134 | 4000287 220nF -20+80% 25V | C516 | 4010271 10nF 10% 50V |
| C135 | 4000418 330pF 5% 50V | C517- | 4000424 1nF 5% 50V |
| C136- | 4010274 100nF -20+80% 25V | C518 | 4040274 400mF 20 900/ 25V |
| C149 | 4010374 100mE 20.909/ 3EV | C519 | 4010274 100nF -20+80% 25V 4000418 330pF 5% 50V |
| C154- C156 | 4010274 100nF -20+80% 25V | C520 C521 | 4000418 330pr 5% 50V 4000417 270pF 5% 50V |
| C157 | 4201163 10µF 20% 35V | C521 | 4010314 220nF -20+80% 25V |
| C158- | 4010274 100nF -20+80% 25V | C523 | 4000392 100pF 2% 50V |
| C160 | 4010274 100111 2010070 234 | C524 | 4000397 27pF 2% 50V |
| C161 | 4000416 220pF 5% 50V | C525- | 4201163 10µF 20% 35V |
| C162- | 4010274 100nF -20+80% 25V | C527 | |
| C166 | | C529- | 4201163 10µF 20% 35V |
| C167- | 4000418 330pF 5% 50V | C536 | • |
| C172 | • | C538- | 4201163 10µF 20% 35V |
| C200- | 4000408 47pF 5% 50V | C539 | • |
| C203 | • | C541- | 4010274 100nF -20+80% 25V |
| C204- | 4000412 100pF 5% 50V | C544 | |
| C207 | | C546 | 4200688 47µF 20% 50V |
| C208- | 4000408 47pF 5% 50V | C548 | 4200688 47µF 20% 50V |
| C209 | | C550- | 4200688 47µF 20% 50V |
| C210- | 4010274 100nF -20+80% 25V | C551 | |
| C229 | | C552 | 4010274 100nF -20+80% 25V |
| | | | |

| C553 | | | | | |
|--|--|---|-------|---------|-------------------|
| | | 1nF 5% 50V | C749 | | 100nF -20+80% 25V |
| C554 | | 220nF -20+80% 25V | C750 | | 1nF 10% 50V |
| C556- | 4201163 | 10μF 20% 35V | C751- | 4000406 | 33pF 5% 50V |
| C558 | | | C752 | | |
| C705 | | 1nF 10% 50V | C753- | 4000408 | 47pF 5% 50V |
| C706- | 4000416 | 220pF 5% 50V | C754 | | |
| C709 | | | C755 | | 100nF -20+80% 25V |
| C714 | 4201417 | 1000µF 20% 16V | C756 | 4000418 | 330pF 5% 50V |
| C715- | 4010274 | 100nF -20+80% 25V | C757- | 4010237 | 1nF 10% 50V |
| C716 | | | C759 | | |
| C717 | 4000415 | 180pF 5% 50V | C760 | 4000412 | 100pF 5% 50V |
| C718 | | 1nF 5% 50V | C761 | | 1nF 10% 50V |
| | | 270pF 5% 50V | C762- | | 470pF 5% 50V |
| C719- | 4000417 | 270pr 5% 50V | | 4000420 | 470pr 378 30V |
| C721 | | | C764 | | 220 |
| C722 | | 470pF 5% 50V | C765 | | 220pF 5% 50V |
| C723- | 4010237 | 1nF 10% 50V | C766 | | 470pF 5% 50V |
| C724 | | | C767 | | 1nF 5% 50V |
| C725 | 4000420 | 470pF 5% 50V | C768- | 4010274 | 100nF -20+80% 25V |
| C726- | 4010237 | 1nF 10% 50V | C770 | | |
| C729 | | | C771 | 4010271 | 10nF 10% 50V |
| C731 | 4000420 | 470pF 5% 50V | C772 | 4200824 | 22µF 20% 50V |
| C731- | | 1nF 10% 50V | C773 | 4010316 | 100nF 10% 25V |
| | 701023/ | 111 10/0 30 V | C774 | | 1nF 10% 50V |
| C733 | 4040374 | 100-5 20.000/ 251/ | C775 | | 100nF 10% 25V |
| C734- | 40102/4 | 100nF -20+80% 25V | | | |
| C736 | | | C776- | 42011/3 | 10μF 20% 50V |
| C737- | 4010237 | 1nF 10% 50V | C777 | | |
| C741 | | | C778 | | 220pF 5% 50V |
| C742 | 4000420 | 470pF 5% 50V | C779 | | 100pF 5% 50V |
| C743- | 4010237 | 1nF 10% 50V | C780 | 4010316 | 100nF 10% 25V |
| C747 | | | C867 | 4000412 | 100pF 5% 50V |
| C748 | 4201165 | 22µF 20% 10V | | | |
| L1- | 8020916 | Coil 47µH 5% | L702 | 8021113 | Coil 47µH 10% |
| L2 | 0020310 | εσιι 47μ11 370 | L703 | | Coil 70µH |
| | 9020705 | Coll 100mH 1094 | L704- | | Coil 3.3µH 5% |
| L200- | 8020705 | Coil 100µH 10% | | 0020022 | Con 3.5µ11 570 |
| L203 | | | L708 | 0020772 | C=:1.10H 209/ |
| L500 | | Coil 10µH 2% | L711- | 8020772 | Coil 10µH 20% |
| L501 | | ? Coil 3.3µH 5% | L712 | | |
| L502 | 8020966 | Coil 10µH 2% | | | |
| L700- | 8020821 | Coil 2.2µH 5% | | | |
| L701 | | | | | |
| X700 | 8090181 | Crystal 14.7456MHz | | JUL | |
| | | Crystal 32.768KHz | | | |
| | 0030133 | CIVSTALISE./OURLIE | | | |
| X701 | | | | | |
| B700 | 8700040 |) Battery lithium | | | |
| B700 ——————————————————————————————————— | | | 3 | | |
| B700 ——————————————————————————————————— | 7229141 | Battery lithium Holder f/ribbon cable | | | |
| P2- P9 P10 | 7229141 7221119 | Battery lithium Holder f/ribbon cable Plug 12/12 pole | | | |
| P2- P9 P10 P11 | 7229141 7221119 7221064 | Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole | 10.00 | | |
| P2- P9 P10 P11 P13- | 7229141 7221119 7221064 | Battery lithium Holder f/ribbon cable Plug 12/12 pole | 10.00 | | |
| P2- P9 P10 P11 | 7229141 7221119 7221064 722914 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole | | | |
| P2- P9 P10 P11 P13- | 7229141 7221119 7221064 722914 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole | | | |
| P2- P9 P10 P11 P13- P14 | 7229141 7221119 7221064 722914 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 | 7229141 7221119 7221064 7229141 7221120 7211059 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 | 7229141 7221119 7221064 7229141 7221126 7211059 7221198 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 | 7229141 7221105 7221105 7221106 7221105 7221106 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 | 7229141 7221106 7229141 7229141 7221126 721105 7221196 7221046 722104 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole Plug 5/5 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- | 7229141 7221106 7229141 7229141 7221126 721105 7221196 7221046 722104 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- P23 | 7229141 7221106 7229141 7229141 7221126 721105 7221196 7221046 7221046 7211176 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole Plug 5/5 pole Socket 21 pole SCART | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- P23 P24 | 7229141 7221106 7229141 7229141 7221126 721105 7221196 7221046 7221047 721107 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole Plug 5/5 pole Socket 21 pole SCART Socket 16 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- P23 P24 P39 | 7229141 7221105 7221105 7221106 7221106 722104 722104 721107 721090 721105 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole Plug 5/5 pole Socket 21 pole SCART Socket 16 pole Socket 6 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- P23 P24 | 7229141 7221105 7221105 7221104 722104 721117 721090 721105 722108 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 6/6 pole Plug 6/6 pole Socket 21 pole SCART Socket 16 pole Socket 6 pole Plug 5/5 pole | | | |
| P2- P9 P10 P11 P13- P14 P16 P17 P18 P19 P20 P21- P23 P24 P39 | 7229141 7221105 7221105 7221104 722104 721117 721090 721105 722108 | D Battery lithium Holder f/ribbon cable Plug 12/12 pole Plug 9/9 pole Socket 10 pole Plug 14/14 pole Socket 16 pole Plug 8/8 pole Plug 6/6 pole Plug 5/5 pole Socket 21 pole SCART Socket 16 pole Socket 6 pole | | | |

| 12.18 | 19 | 23 | 51 | 136 | 149 | 150 | °151° |
|--------------|-------|-------|------------|----------|--------------------|--|-------|
| E B C | C B E | B E C | E B | ! | HEF xxxx 1—▶ | 1- | 1 |
| 244 | 250 | | Brisani Di | POR | V. Free Branch | (* = = = = = = = = = = = = = = = = = = = | [] |
| A C | A C | | | | | | |

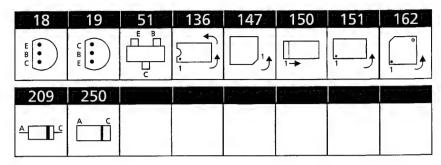
Resistors not referred to are standard, see page 3-27

PCB 20, 8008334 Satellite

| IC1- | 8341857 | 136 | LM 339 | IC7 Δ | 8341059 | 150 | 4052 |
|---------------|---------|------|-------------------|--------------|--------------------|------------|--------------------|
| IC2 | | | | IC9∆ | 8342207 | 151 | TDA 6151-5 |
| IC5∆- | 8341025 | 150 | 4094 | IC10∆ | 8342307 | | TDA 8740 |
| IC6∆ | | | | IC11 | 8341098 | 149 | LM 358 |
| TR1- | 8320497 | 18 | BC 547B | TR35 | 8320811 | 51 | BC 857B |
| TR3 | | | | TR36- | 8320755 | 51 | BC 847B |
| TR6- | 8320552 | 18 | BC 327-25 | TR37 | | | |
| TR9 | | | | TR38 | 8320497 | 18 | BC 547B |
| TR13- | 8320755 | 51 | BC 847B | TR39 | 8320811 | 51 | BC 857B |
| TR14 | | | | TR40 | 8320497 | | BC 547B |
| TR17- | 8320755 | 51 | BC 847B | TR41- | 8320503 | 18 | BC 557B |
| TR18 | 0220755 | | DC 047D | TR42 | 0220011 | -4 | DC 957B |
| TR20- | 8320755 | 51 | BC 847B | TR43 | 8320811 | 51 | BC 857B BC 547B |
| TR21 | 0220502 | 40 | DC EE7D | TR44 | 8320497 | | BC 847B |
| TR23 TR25- | 8320503 | 18 | BC 557B | TR45 TR46 | 8320755 8320503 | | BC 557B |
| | 8320811 | 51 | BC 857B | TR47 | 8320755 | | BC 847B |
| TR27 TR28 | 8321064 | 23 | BF 420 | TR48 | 8320497 | | BC 547B |
| TR30 | 8321004 | | ZTX 690B | TR49 | 8320755 | | BC 847B |
| TR31- | 8321072 | | ZTX 790A | 11045 | 0320733 | ٠. | BC 0-770 |
| TR34 | 0321073 | ,,, | LINISON | | | | |
| D3- | 8300482 | 250 | LL 4148 | D32 | 8300606 | 250 | LL 4448 |
| D8 | | | | D33- | 8300482 | 250 | LL 4148 |
| D9 | | | Z30V 2% 0.5W | D36 | | | |
| D10- | 8300482 | 250 | LL 4148 | D38- | 8300482 | 250 | LL 4148 |
| D17 | | | | D41 | | | |
| D23 | 8300562 | | | D42 | 8300607 | | |
| D24 | 8300563 | | | D43 | 8300687 | | |
| D25- | 8300644 | 250 | Z6.2V 2% 0.5W | D48 | 8300907 | 244 | GF1B 100V |
| D27 | 0200044 | 250 | 55.44 | | | | |
| D28- D29 | 8300914 | 250 | SS 14 | | | | |
| R4 | 5011755 | 1Ω 2 | % 1/4W | R148 | 5020714 | 0.1Ω | 10% 0.4W |
| R7- | | | % 1/4W | R149 | 5021511 | 4700 | 21% 1/4W |
| R9 | | | | R150 | 5021520 | 10Ω | 1% 1/4W |
| R10 | 5021501 | 3900 | 2 1% 1/4W | R151 | 5021372 | 5.36 | KΩ 1% 1/4W |
| R15 | 5011853 | 1580 | 2 1% 1/4W | R152- | 5021483 | 68Ω | 1% 1/4W |
| R102- | 5021226 | 100 | (Ω 1% 1/4W | R153 | | | |
| R103 | | | | R154 | 5021494 | 4.64 | KΩ 1 % 1/4W |
| R108- | 5021374 | 42.2 | KΩ 1% 1/4W | R155 | 5021520 | 10Ω | 1% 1/4W |
| R109 | | | | R156- | 5021522 | 2 1.2Ω | 25% 1/4W |
| R113 | | | KΩ 1% 1/4W | R157 | | | |
| R134 | | | Ω 1% 1/4W | R158 | | | 2 10% 0.4W |
| R135 | | | (Ω 1% 1/4W | R168 | | | Ω 1% 1/4W |
| R136 | | | 1% 1/4W | R171 | | | Ω 1% 1/4W |
| R137 | | | KΩ 1% 1/4W | R172 | | | 5% 2W |
| R138 | | | KΩ 1% 1/10W | R173 | | | KΩ 1 % 1/4W |
| R139 | | | KΩ 1% 1/10W | R174 | | | KΩ 1 % 1/4W |
| R140- | 5021334 | 3.32 | KΩ 1% 1/4W | R177 | | | 25% 1/4W |
| 137 4 4 | | | | R186 | 5021494 | 4.64 | KΩ 1% 1/4W |
| R141 R142- | F644F4 | | 5% 1W | R191 | F03440 | | KΩ 1 % 1/4W |

Δ indicates that static electricity may destroy the component

| R196 | 5011631 1 | KΩ 1% 1/4W | R212- | 5021492 | 2.7KΩ 1% 1/4W |
|-------------|-----------|--------------------------|---------------|---------|--------------------------|
| 199- | | 8KΩ 1% 1/4W | R213 | | |
| 200 | | | R214 | | 680Ω 1% 1/4W |
| 201 | 5021226 1 | 00KΩ 1% 1/4W | R216 | | 3.32KΩ 1% 1/4W |
| 203 | 5021511 4 | 70Ω 1% 1/4W | R217 | | 43.2KΩ 1% 1/4W |
| 206 | | .32KΩ 1% 1/4W | R218 | | 560Ω 1% 1/4W |
| R210- | 5021382 5 | .6KΩ 1% 1/4W | R223 | 5021225 | 10KΩ 1% 1/4W |
| R211 | | | | | |
| C4 - | 4000400 1 | 0pf 5% 50V | C50 | | 470µF 20% 25V |
| 26 | | | C51 | | 100µF 20% 16V |
| 28 | 4000400 1 | 0pF 5% 50V | C52 | 4201171 | 1µF 20% 50V |
| C9 | 4000406 3 | 3pF 5% 50V | C53 | 4201173 | 10µF 20% 50V |
| 10 | 4000410 6 | 8pF 5% 50V | C55 | 4010216 | 22nF 10% 100V |
| 211 | | 2pF 5% 50V | C56- | 4200824 | 22µF 20% 50V |
| 12 | | 8pF 5% 50V | C59 | 4204474 | 4F 20% FOV |
| C13- | 4000412 1 | 00pF 5% 50V | C61- | 42011/1 | 1μF 20% 50V |
| C15 | | 20 550/ 501/ | C63 | 42012EE | 470µF 20% 25V |
| C16 | | 30pF 5% 50V | C64 | 4201230 | 10μF 20% 50V |
| C17 | | 70pF 5% 50V | C66 | 4201173 | 10μF 20% 50V |
| C18 | | 30pF 5% 50V | C69 C70 | 4201173 | 2.2µF 20% 50V |
| C19- | 4010267 4 | 1.7nF 10% 50V | C76 | 4201174 | 470µF 20% 25V |
| C20 C21- | 4010271 1 | OnF 10% 50V | C77 | | 82pF 5% 50V |
| C21- C22 | 4010271 | 10/11 10 /0 30 V | C80 | | 100pF 5% 50V |
| C23 | 4010272 2 | 2nF -20+80% 50V | C83 | | 1nF 2.5% 63V |
| C24 | | 1.7nF 10% 50V | C85 | | 10µF 20% 50V |
| C25- | | 00nF -20+80% 25V | C86 | | 1µF 20% 50V |
| C28 | | | C87 | 4010274 | 100nF -20+80% 25V |
| C29 | 4010216 2 | 22nF 10% 100V | C88 | | 220nF -20+80% 25V |
| C30- | 4010274 1 | 100nF -20+80% 25V | C89 | | 100µF 20% 16V |
| C31 | | | C90 | | 1nF 20% 50V |
| C32 | 4010263 2 | 2.2nF 10% 50V | C91 | | 100nF 10% 25V |
| C33 | 4010274 1 | 100nF -20+80% 25V | C92 | | 47nF -20+80%50∨ |
| C35 | 4010274 1 | 100nF -20+80% 25V | C93- | 4010316 | 100nF 10% 25Y |
| C36- | 4010314 | 220nF -20+80% 25V | C94 | | |
| C37 | | | C95 | 4201143 | 10µF 20% 25VBipola |
| C39 | | 22nF 10% 100V | C97- | 4010274 | 100nF -20+80% 25V |
| C40- | 4010314 | 220nF -20+80% 25V | C99 | 4040244 | 220nF-20+80% 2 5V |
| C42 | | 22 5400(400)/ | C101 | | 33nF 5% 63V |
| C44 | | 22nF 10% 100V | C972- C974 | 4130320 | 33111 370 034 |
| C47- | 4010274 | 100nF -20+80% 25V | C974 | 4130473 | 120nF 5% 63V |
| C48 C49 | 4130235 | 47nF 20% 63V | C373 | 7130473 | , , , 2011. |
| L2- | 8021090 | Coil 6.8µH 5% | L8 | 8020759 | 9 Coil 1mH 10% |
| L3 | 0021030 | Con Olopii 570 | L9 | | 3 Coil 330µH 10% |
| L5 | 8020907 | Coil 47µH 10% | L10- | | Coil 8.2µH 10% |
| L6 | | Coil 600µH | L11 | | |
| BP1 | 8030283 | Cer. filter 5.80MHz | BP15 | 803029 | 3 Cer. filter 7.02M ► 12 |
| BP2 | | Cer. filter 6.5MHz | BP16 | | Cer. filter 8.28MHz |
| BP3 | | Cer. filter 6.65MHz | BP18 | | 7 Cer. filter 8.10MHz |
| BP6 | | Cer. filter 8.28MHz | BP20 | 803028 | 8 Cer. filter 7.92M Hz |
| BP8 | 8030287 | Cer. filter 8.10MHz | BP21 | | 9 Cer. filter 7.74M Hz |
| BP10 | | Cer. filter 7.92MHz | BP22 | | 0 Cer. filter 7.5iM Hz |
| BP11 | 8030289 | Cer. filter 7.74MHz | BP23 | | 1 Cer. filter 7.3IM Hz |
| BP12 | | Cer. filter 7.56MHz | BP24 | | 2 Cer. filter 7.2IM Hz |
| BP13 | 8030291 | Cer. filter 7.38MHz | BP25 | 803029 | 3 Cer. filter 7.0(M Hz |
| BP14 | 8030292 | Cer. filter 7.20MHz | | | |
| TU1 | 8050149 | Tuner <u>S</u> XT2001CDI | | | |
| | | | | | |
| P25 | 7221121 | Plug 16/16 pole | | | |



PCB 30, 8008335 **Dolby Surround**

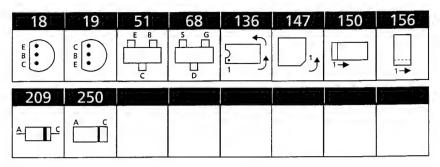
| | 8341058 | 150 | 4051 | IC7 | 8342238 | 151 | TDA 7318D |
|----------------------|---------|-------|-------------------|------------|-----------|--------|--------------------------|
| C1Δ C2Δ | 8341059 | | 4052 | IC8 | 8342387 | | |
| C2Δ C3Δ- | | | PCF 8574 | IC9 | 8341812 | | LM 393 |
| | 8341173 | 130 | PCF 6574 | | 8341022 | | 4558 |
| C4 _{\Delta} | 0244540 | 400 | CCN 242CA | IC10- | 0341022 | 130 | 4556 |
| C5 | 8341510 | | | IC15 | | | |
| C6∆ | 8341861 | 151 | HYB 511000 | | | | |
| TR1 | 8320595 | 18 | BC 337-40 | TR10 | 8320497 | 18 | BC 547B |
| ΓR2- | 8321080 | 51 | FMMT 491A | TR11 | 8320811 | 51 | BC 857B |
| TR5 | | | | TR12 | 8320755 | 51 | BC 847B |
| TR6- | 8320811 | 51 | BC 857B | TR13 | 8320811 | 51 | BC 857B |
| TR7 | | | | TR14 | 8321073 | 19 | ZTX 790A |
| TR8- | 8320755 | 51 | BC 847B | | | | |
| TR9 | | | | | | | |
| D1- | 8300482 | 250 | LL 4148 | D13- | 8300914 | 250 | SS 14 |
| D9 | | | | D14 | | | |
| D10 | 8300520 | 250 | Z6.8V 5% 0.5W | D15- | 8300482 | 250 | LL 4148 |
| D11 | 8300661 | | | D16 | | | |
| D12 | 8300762 | | | D29 | 8300482 | 250 | LL 4148 |
| R11 | 5013012 | 137K | Ω 1% 1/10W | R151- | 5012240 | 100K | Ω 1% 1/10W |
| R12- | | | CΩ 1% 1/4W | R152 | 3012240 | 1001 | |
| | 3011036 | 7.001 | 722 1 30 174VA | R153 | 5020875 | 1014 | Ω5% 1/8W |
| R13 | E011002 | 60 01 | CΩ 1% 1/8W | | | | Ω 5% 1/4W |
| R145 | | | Ω 1% 1/4W | R154 | | | 2 1% 1/4W |
| R146 | 5012200 | 2.2K | 12 170 1/4VV | R156 | 5021552 | 2705 | 2 1 70 174VV |
| C1- | 4000414 | 150p | F 5% 50V | C56- | 4010314 | 220n | F -20+80% 25 |
| C5 | | | | C57 | | | |
| C6- | 4000290 | 22nF | 10% 50V | C58 | 4010315 | 22nF | 10% 25V |
| C7 | | | | C59- | 4010323 | 1μF- | 20+80% 16V |
| C8- | 4000326 | 680p | F 5% 50V | C60 | | | |
| C9 | | | | C61- | 4130309 | 330r | F10% 63V |
| C10- | 4000405 | 27pF | 5% 50V | C64 | | | |
| C11 | | | | C65 | 4010339 | 68nF | 10% 50V |
| C12 | 4000409 | 56pF | 5% 50V | C66 | 4010340 | 150r | F 10% 25V |
| C13 | | | 5% 50V | C67- | 4000351 | 1.5n | F 5% 50V |
| C14 | 4000415 | 180g | F 5% 50V | C68 | | | |
| C15- | | | F 5% 50V | C69 | 4100210 | 1.5n | F 5% 63V |
| C16 | | | | C70 | | | F 5% 63V |
| C17 | 4000326 | 680r | F 5% 50V | C71 | | | F 5% 63V |
| C18- | 4000424 | | | C72- | | | 10% 63V |
| C23 | | | | C74 | | | |
| C24 | 4000461 | 1nF | 5% 50V | C75- | 4130304 | . 22nl | 10% 63V |
| C25 | | | nF -20+80% 25V | C78 | .,50504 | | |
| C26 | | | F 10% 50V | C79- | 4130306 | 100 | nF10% 63V |
| C27 | | | F 10% 50V | C83 | -, 150500 | , 001 | |
| | | | F -20+80% 50V | | /12020T | 150 | nF 10% 63V |
| C28- | 4010272 | 22111 | -20+0070 JUV | C84- | 4130307 | 1501 | 10 /0 03 V |
| C29 | 404007 | 400 | F 20.000/ 251/ | C87 | 442020 | 220 | -E 100/ C3V |
| C30 | 4010274 | 1001 | nF -20+80% 25V | C88- | 4130308 | 220 | nF 10% 63V |
| C30- | | | | | | | |
| C50 | | | | C90 | | | E 40.61 |
| | 4010274 | 100 | nF -20+80% 25V | C91 C92 | | | F 10 % 63V F 20 % 16V |

 $[\]Delta$ indicates that static electricity may destroy the component

PCB 31, 8007809 Nicam

| C95 C96 4200672 22μF 20% 16V Bipolar C120 4200704 470μ C97- 4200916 4.7μF 20% 25V C121- 4200916 4.7μF 20% 25V Bipolar C133 C101 4201143 10μF 20% 25V Bipolar C134 4340034 7.5-! C102- 4201163 10μF 20% 35V C135 4010274 10007 C136- C107 4201165 22μF 20% 10V C137 C108 4010274 100nF -20+80% 25V C138- C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C111 | 1F 20% 25V 50pF nF -20+80% 25V 1F 5% 63V F 10% 63V 47μH 10% 1.2A 1 LM 3578 1 TL 026CP |
|---|---|
| C95 C96 4200672 22μF 20% 16V Bipolar C120 4200704 470μ C97- 4200916 4.7μF 20% 25V C121- 4200916 4.7μF 20% C133 C101 4201143 10μF 20% 25V Bipolar C134 4340034 7.5-1 C102- 4201163 10μF 20% 35V C135 4010274 1000 C136 C136- 4100308 2.7n C108 4010274 100nF -20+80% 25V C138- C109 4201165 22μF 20% 10V C137 C108 4010274 100nF -20+80% 25V C138- C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C1111 L1- 8020916 C0il 47μH 5% 450mA L3 8020907 Coil L1 8014110 Transformer 70μH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC3 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 | uF 20% 25V uF 20% 25V 50pF nF -20+80% 25V uF 5% 63V F 10% 63V 47μH 10% 1.2A LM 3578 i LM 3578 i TL 026CP |
| C96 | 1F 20% 25V 50pF nF -20+80% 25V 1F 5% 63V F 10% 63V 47μH 10% 1.2A 1 LM 3578 1 TL 026CP |
| C37- 4200916 4.7μF 20% 25V C121- 4200916 4.7μC100 C133 C101 4201143 10μF 20% 25V Bipolar C134 4340034 7.5-3 C102- 4201163 10μF 20% 35V C135 4010274 100π C106 C107 4201165 22μF 20% 10V C137 C108 4010274 100πF -20+80% 25V C138- 4130265 10πl C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C138- 4130265 10πl C110- 4201188 220μF 20% 25V C138- 4130265 10πl C111 L1- 8020916 Coil 47μH 5% 450mA L3 8020907 Coil L2 T1 8014110 Transformer 70μH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 | 1F 20% 25V 50pF nF -20+80% 25V 1F 5% 63V F 10% 63V 47μH 10% 1.2A 1 LM 3578 1 TL 026CP |
| C100 C101 C101 C101 C101 C101 C102 C102 | 50pF nF -20+80% 25V iF 5% 63V F 10% 63V 47μΗ 10% 1.2A i LM 3578 i TL 026CP |
| C101 4201143 10μF 20% 25V Bipolar C134 4340034 7.5-1 C102- 4201163 10μF 20% 35V C135 4010274 100π C106 C136- 4100308 2.7π C107 4201165 22μF 20% 10V C137 C108 4010274 100πF -20+80% 25V C138- 4130265 10πI C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C1111 L1- 8020916 Coil 47μH 5% 450mA L3 8020907 Coil L1- 8090192 Crystal 8MHz T1 8014110 Transformer 70μH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole 7210518 DIN 8 pole P53- 7210518 DIN 8 pole IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 256 | nF -20+80% 25V nF 5% 63V F 10% 63V 47µH 10% 1.2A 10 LM 3578 10 LM 3578 |
| C102- 4201163 10μF 20% 35V C135 4010274 100π C106 C136- 4100308 2.7m C108 4010274 100mF -20+80% 25V C138- 4130265 10ml C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C139 C110- 4201188 220μF 20% 25V C139 C111 8020916 Coil 47μH 5% 450mA L3 8020907 Coil L2 8014110 Transformer 70μH CX1 8090192 Crystal 8MHz C109 7210518 DIN 8 pole P53- 7210518 DIN 8 pole | nF -20+80% 25V nF 5% 63V F 10% 63V 47µH 10% 1.2A 10 LM 3578 10 LM 3578 |
| C102- 4201163 10μF 20% 35V C135 4010274 100π C106 C136- 4100308 2.7m C108 4010274 100mF -20+80% 25V C138- 4130265 10ml C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C139 C110- 4201188 220μF 20% 25V C139 C111 8020916 Coil 47μH 5% 450mA L3 8020907 Coil L2 8014110 Transformer 70μH CX1 8090192 Crystal 8MHz C109 7210518 DIN 8 pole P53- 7210518 DIN 8 pole | nF -20+80% 25V nF 5% 63V F 10% 63V 47µH 10% 1.2A 10 LM 3578 10 LM 3578 |
| C106 C107 C108 C107 C108 C108 C109 C109 C109 C109 C110- C110- C110- C110- C111 C111 C111 C111 C110- C110- C110- C110- C111 C11 | F 5% 63V F 10% 63V 47μΗ 10% 1.2A E LM 3578 T L 026CP |
| C107 | F 10% 63V 47μΗ 10% 1.2A 6 LM 3578 6 TL 026CP |
| C108 | 47μH 10% 1.2A 47μH 3578 TL 026CP |
| C109 4201165 22μF 20% 10V C139 C110- 4201188 220μF 20% 25V C1111 L1- 8020916 Coil 47μH 5% 450mA L3 8020907 Coil L2 T1 8014110 Transformer 70μH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 | 47μH 10% 1.2A 47μH 3578 TL 026CP |
| C110- | LM 3578 TL 026CP |
| C110- 4201188 220µF 20% 25V C111 L1- 8020916 Coil 47µH 5% 450mA L3 8020907 Coil L2 T1 8014110 Transformer 70µH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3A 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 256 | LM 3578 TL 026CP |
| C111 L1- L1- L1- L2 R020916 Coil 47μH 5% 450mA L3 R020907 Coil L2 T1 R014110 Transformer 70μH X1 R090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 R340790 136 4558 IC5 R341225 136 IC2 R341724 147 SAA 7322 IC6 R341368 136 IC3Δ R341308 136 74HC4053 IC7 R341754 147 IC4 R340790 136 4558 TR3 R320595 18 BC 337-40 TR4 R320615 51 D1 R300817 209 1N 5819 D3- R300482 256 | LM 3578 TL 026CP |
| T1 8014110 Transformer 70μH X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 256 | LM 3578 TL 026CP |
| X1 8090192 Crystal 8MHz P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3A 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| P26 7211059 Socket 16 pole P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| P53- 7210518 DIN 8 pole P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| P53- P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| P56 IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 256 | TL 026CP |
| IC1 8340790 136 4558 IC5 8341225 136 IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3Δ 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| IC2 8341724 147 SAA 7322 IC6 8341368 136 IC3A 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | TL 026CP |
| IC3A 8341308 136 74HC4053 IC7 8341754 147 IC4 8340790 136 4558 TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | |
| TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | CF / UU88 |
| TR3 8320595 18 BC 337-40 TR4 8320615 51 D1 8300817 209 1N 5819 D3- 8300482 250 | |
| D1 8300817 209 1N 5819 D3- 8300482 250 | |
| | BC 848B |
| | |
| D2 8300639 250 Z12V 2% 0.5W D4 | LL 4148 |
| | |
| 40 | 60.40/.4/014/ |
| R1 5012154 1KΩ 1% 1/8W R22- 5011557 10k | CΩ 1% 1/8W |
| R3 5020759 0.27Ω 5% 1/4W R24 | |
| | 3KΩ 1% 1/8W |
| | 4KΩ 1% 1/8W |
| | |
| | |
| | 4KΩ 1% 1/8W |
| R13- 5021368 162KΩ 1% 1/8W R29 5012145 3.8 | 3KΩ 1% 1/8W |
| R14 R31 5020809 109 | Ω 10% 0.4W |
| | 1KΩ 1% 1/8W |
| | 1KΩ 1% 1/8W |
| | 4KΩ 1% 1/4W |
| | 4KΩ 1% 1/4W 5KΩ 1% 1/8W |
| | |
| C1 4201301 220µF-20+50% 16V C19 4000326 680 | • |
| C2 4200952 47µF -20+50% 25V C20 4010209 47 | |
| C3 4000345 1nF 5% 50V C21 4000284 330 | • |
| C4 4000233 220pF 5% 50V C22 4000286 470 | • |
| C5- 4200512 1µF 20% 50V C23 4000326 68 | 0pF 5% 50V |
| · | pF ±0.5pF 50V |
| C9 4130304 22nF 20% 63V C26 4010157 10 | • |
| | |
| C10 4000290 22nF-20+80% 50V C28 4000239 33 | • |
| | OnF 20% 637 |
| C12- 4010220 100nF 10% 50V C30 4010157 10 | nF 10% 50V |
| C13 C31 4000290 22 | nE-20+80% FO |
| | 111 -20+00703UV |
| | |
| C1E C24 | OpF 5% 50V |
| C15 C34 | OpF 5% 50V |
| C16 4000284 330pF 5% 50V C35 4010166 10 | 0pf 5% 50V 0nf -20+80% 5 0 |
| C16 4000284 330pF 5% 50V C35 4010166 10 C17 4000286 470pF 5% 50V C38 4010166 10 | OpF 5% 50V |

[△] indicates that static electricity may destroy the component



Resistors not referred to are standard, see page 3-27

| C40 | 4000280 68pF 5% 50V | C49 | 4200511 100µF 20% 10V |
|------|---------------------------|------|--------------------------|
| C41 | 4000345 1nF 5% 50V | C50 | 4000239 33pF 5% 50V |
| C42 | 4010157 10nF 10% 50V | C51 | 4000239 33pF 5% 50V |
| C43- | 4010166 100nF -20+80% 50V | C52 | 4200525 22µF 20% 10V |
| C44 | | C53 | 4010209 47nF 10% 50V |
| C45 | 4000290 22nF -20+80% 50V | C54- | 4000219 10pF ±0.5pF 50V |
| C46 | 4010157 10nF 10% 50V | C56 | |
| C47- | 4010171 1.5nF 10% 50V | C57 | 4000290 22nF -20+80% 50V |
| C48 | | C58 | 4000267 3pF ±0.25pF 50V |
| | | | |
| | | | |
| L1 | 8020759 Coil 1mH 10% | L6 | 8020552 Coil 10µH 10% |
| L2 | 8020672 Coil 33µH 10% | | |
| L3- | 8020649 Coil 3.9µH 5% | | |
| | | | |

| L2 | 8020672 | Coil 33µH 10% |
|-----|---------|---------------|
| L3- | 8020649 | Coil 3.9µH 5% |
| L5 | | |

| 090148 | Crystal | 16.384MHz |
|--------|---------|----------------|
| | 090148 | 090148 Crystal |

| P94 P95 | 7220713 Socket 6/6 pole 7220710 Socket 3/3 pole | P97 | 7220712 Socket 4/4 pole |
|------------|--|-----|----------------------------|
| IC1 | 8341022 156 4558 | IC5 | 8342673 150 LM 3578 |

| IC1 | 8341022 156 | 4558 | IC5 | 8342673 150 | LM 3578 |
|------|--------------------|-----------|-----|--------------------|----------|
| IC2∆ | 8343032 136 | TDA 1306T | IC6 | 8341368 136 | TL 026CP |
| IC3∆ | 8341822 150 | HC 4053 | IC7 | 8341754 147 | CF 70088 |
| IC4 | 8341022 150 | 4558 | IC8 | 8341022 150 | 4558 |
| | | | | | |

| TR3 | 8320595 | 18 | BC 337-40 |
|-----|---------|----|-----------|
| TR4 | 8320615 | 51 | BC 848B |
| | | | |

| D1 D2 | 8300817 209 8300639 250 | 1N 5819 Z12V 2% 0.5W | D3- D4 | 8300482 250 LL 4148 | |
|----------|--|-------------------------|-----------|----------------------------|--|
| | | | | | |

| R1 | 5012154 1KΩ 1% 1/8 | 3W R20- | 5021367 | 47.5KΩ 1% 1/8W |
|------|--------------------|----------|---------|----------------|
| R3 | 5020759 0.27Ω 5% | 1/4W R21 | | |
| R4 | 5011994 4.02ΚΩ 1% | 1/8W R25 | 5011871 | 365Ω 1% 1/8W |
| R10 | 5021301 10KΩ 1% 1 | /8W R26 | 5013032 | 30.1KΩ 1% 1/8W |
| R11- | 5021398 16.9KΩ 1% | 1/8W R28 | 5013032 | 30.1KΩ 1% 1/8W |
| R12 | | R29 | 5011871 | 365Ω 1% 1/8W |
| R13- | 5021368 162KΩ 1% | 1/8W R31 | 5020809 | 10Ω 10% 0.4W |
| R14 | | R49 | 5020801 | 2.74KΩ 1% 1/4W |
| R17- | 5011557 10ΚΩ 1% 1 | /8W R50 | 5011792 | 4.75KΩ 1% 1/8W |
| R19 | | | | |
| | | | | |

| C1 | 4201301 220µF -20+50% 16V | C11 | 4130526 100nF 5% 63V |
|-----|---------------------------|------|-----------------------|
| C2 | 4200952 47µF -20+50% 25V | C12- | 4010220 100nF 10% 50V |
| C3 | 4000345 1nF 5% 50V | C13 | |
| C4 | 4000233 220pF 5% 50V | C15 | 4010209 47nF 10% 50V |
| C5- | 4200512 1µF 20% 50V | C18 | 4130526 100nF 5% 63V |
| C8 | | C19 | 4000290 22nF 10% 50V |
| C9 | 4130304 22nF 10% 63V | C21 | 4010220 100nF 10% 50V |
| C10 | 4000290 22nF 10% 50V | C23 | 4000290 22nF 10% 50V |
| | | | |

PCB 31, 8007809 Nicam (New version)

[△] indicates that static electricity may destroy the component

| C24 | 4000219 10 | 0pF | 0.5pF 50V | C42 | 4010157 | 10nF | 10% 50V |
|-----------|------------------|-------|----------------------------|-------------|---------|-------|--------------------------|
| C26 | 4010157 10 | 0nF | 10% 50V | C43- | 4010166 | 100nF | -20+80% 50V |
| C27 | 4000290 2 | 2nF | 10% 50V | C44 | | | |
| C28 | 4000239 3 | 3pF | 5% 50V | C45 | 4000290 | | |
| C29 | 4130230 10 | | | C46 | 4010157 | | |
| C30 | 4010157 10 | 0nF | 10% 50V | C48 | 4200510 | | |
| C31 | 4000290 2 | | | C49 | | , | 20% 10V |
| C32- | 4000326 68 | 80pF | 5% 50V | C50- | 4000240 | 56pF | 5% 50V |
| C34 | | | | C51 | | | |
| C35 | 4010166 1 | 00nF | -20+80% 50V | C52 | 4200525 | | |
| C36- | 4000281 8 | 2pF! | 5% 50V | C53 | 4010209 | | |
| C37 | | | | C54- | 4000219 | 10pF | 0.5pF 50V |
| C38 | | | -20+80% 50V | C56 | | | |
| C39 | 4010157 1 | 0nF | 10% 50V | C57 | 4000290 | | |
| C40 | 4000280 6 | 8pF | 5% 50V | C58 | 4000267 | 3pF 0 | .25pF 50V |
| C41 | 4000345 1 | nF 5 | % 50V | | | | |
| L1 | 8020759 C | oil 1 | mH 10% | | | | |
| L2 | 8020672 C | | | | | | |
| L3- | 8020649 C | | • | | | | |
| L5 | 00200.2 | | | | | | |
| L6 | 8020552 C | oil 1 | 0μH 1% | | | | |
| X1 | 8090148 C | rysta | al 16.384MHz | | | | |
| | | | | | | | |
| P94 | 7220713 S | | • | P96 | | | et 5/5 pole |
| P95 | 7220710 S | ocke | t 3/3 pole | P97 | 7220711 | Socke | et 4/4 pole |
| IC1 | 8341131 1 | 36 | TDA 2579B | IC5 | 8342374 | 136 | SDA 9188 |
| IC2 | 8342115 1 | | TDA 4655 | IC7 | 8341857 | | LM 339 |
| 1C3 | 8342349 1 | | TEA 5114A | IC22 | 8341747 | | TL 7705BCD |
| IC4 | 8342373 1 | | SDA 9187X | | | | |
| TR1- | 8320497 | 18 | BC 547B | TR16 | 8321072 | 19 | ZTX 690B |
| TR4 | 0320437 | 10 | BC 3478 | TR20- | 8320755 | | BC 847B |
| TR5 | 8320755 | 51 | BC 847B | TR22 | 0320733 | | |
| TR7- | 8320497 | 18 | BC 547B | TR42- | 8320856 | 68 | 2N 7002 |
| TR8 | 0320437 | | 000470 | TR43 | 0320030 | | |
| TR10 | 8320503 | 18 | BC 557B | | | | |
| TR11- | | _ | BC 327-25 | | | | |
| TR14 | 0320332 | | 50,527,23 | | | | |
| | | | 11.4440 | D44 | 0200544 | 250 | 76 2V 2W 0 EW |
| D1 | 8300482 2 | | | D11 | 8300644 | | |
| D5- | 8300482 2 | 250 | LL 4148 | D25 | 8300482 | | |
| D7 | 0200544 | | 76 3)/ 30/ 0 5)4/ | D26 | 8300636 | | |
| D8- D9 | 8300644 2 | 250 | Z6.2V 2% 0.5W | D30- D32 | 8300482 | 250 | LL 4148 |
| | F644677 | | 40/ 4/22 | P04 | F04545 | 2.0% | 0.40/.4/9\\ |
| R8- | 5011852 3 | 3325 | 2 1% 1/4W | R91 | | | Ω 1% 1/8W |
| R9 | E024272 7 | 200 | CO 10/ 1/4\A/ | R93 | | | KΩ 1% 1/8₩ 1% 1/4W |
| R10 | | | <Ω 1% 1/4W | R95- | 5021514 | 1 277 | 170 1/444 |
| R17 | | | 2 1% 1/4W | R97 | F024F42 | 2200 | 2 1% 1/4W |
| R20 | | | 2 1% 1/4W | R98- | 5021512 | 2201 | 2 1 70 1/4 VV |
| R21- | 5021521 8 | 5277 | 170 1/4VV | R99 | E004F44 | 4700 | 10/ 1/A\M |
| R23 | E004404 | 1000 | 10/ 1/4\84 | R102 | | | 21% 1/4W |
| R28 | | | 2 1% 1/4W | R105 | | | 1% 1/4W 21% 1/4W |
| R29 | | | 2 1% 1/4W | R106- | 5021511 | 4/0 | 2 70 /→VV |
| R31 | | | 2 1% 1/10W | R107 | E024E20 | 100 | 1% 1/4W |
| R33 | | | 2 1% 1/4W | R108 | | | 1% 1/4VV 25% 1/4W |
| R39 | | | 2 1% 1/4W | R109 | | | Ω 1% 1/8W |
| R41 | | | 25% 1/4W | R308 | | | 2 1% 1/10V |
| R76- | 2011988 | 22K! | Ω 1% 1/8W | R310 | | | 21% 1/10V/ 21% 1/10V/ |
| R77 | 501109# | 5 62 | KΩ 1% 1/8W | R311 | 30123// | 0001 | 4 1 /U 1/ TOW |
| R83 | | | KΩ 1% 1/800 KΩ 1% 1/10W | | | | |
| R84 | JU123/3 | J4.0 | 122 1 70 1/ TUVV | | | | |

PCB 40, 8008336 Picture In Picture

| 18 | 51 | 73 | 149 | 2150 | 151 | 243 | 250 |
|-------|-----------|----------------|----------|------|------|------------|-----|
| E B C | E B C | C _C | HEF xxxx | 1- | | > t | Ê |
| 258 | | | | | RECE | | |
| I C | | | | | | | |

Resistors not referred to are standard, see page 3-27

| P75 | 7211056 | Socket 10 pole | | | |
|-------------|---------|--------------------------------|------------|---------|--|
| P36 P64 | | Plug 16/16 pole Contact pin | | | |
| | 7224624 | Di 45/45 1- | | | |
| X3 | 8090186 | Crystal 20.48MHz | | | |
| X2 | | Crystal 8.86757MHz | | | |
| X1 | | Crystal 7.15909MHz | | | |
| L4 | | | L8 | | |
| L2- | 8020916 | Coil 47µH 5% | L6- | 8020916 | Coil 47µH 5% |
| L1 | 8020741 | Coil 2.46µH | L5 | | Coil 33µH 5% |
| C54 | | 6.8µF 20% 25V | C343 | 4010314 | 220nF -20+80% 25V |
| C53 | 4200508 | 22µF 20% 25V | C342 | 4201172 | 4.7µF 20% 50V |
| C52 | | | C341 | | 100nF -20+80% 50V |
| C45- | - | 100µF 20% 25V | C340 | | 330pF 5% 50V |
| C44 | | 68nF 10% 63V | C339 | 4010314 | 220nF -20+80% 25V |
| C43 | 4010316 | 100nF 10% 25V | C338 | | 100nF -20+80% 25V |
| C42 | .5,5511 | | C337 | | 2.2nF 5% 50V |
| C39- | | 220nF -20+80% 25V | C336 | | 22nF -20+80% 50V |
| C37 | 4000286 | 470pF 5% 50V | C335 | | 220pF 5% 50V |
| C36 | 70102/7 | 100.11 2010070254 | C334 | | 560pF 5% 50V |
| C24 C25- | | 100nF -20+80% 25V | C333 | 4010237 | 1nF 10% 50V |
| C24 | | 100nF -20+80% 50V | C332 | 4010274 | 100111 2010070250 |
| C21 C22 | 4010272 | 22nF -20+80% 50V | C330- | | 100nF -20+80% 25V |
| | 4010271 | 10NF 10% 50V | C75 | | 39pF 5% 50V |
| C16 C20- | | 10nF 10% 50V | C74 | 4000412 | 100pF 5% 50V |
| C14 | | 1nF 5% 50V 2.7nF 1% 63V | C73 | 4010314 | 220HF -20+00 /0 23V |
| C12 | 4000454 | 1-5 50/ 50/ | C69- | | 220nF -20+80% 25V |
| C11- | 4000416 | 220pF 5% 50V | C66 C68 | | 100nF -20+80% 25V 100nF -20+80% 25V |
| C10 | | 180pF 5% 50V | C63 | | 100nF 10% 25V |
| C8 | | 100 FF0/ F01/ | C62 | | 4.7nF 10% 50V |
| C7- | 4000412 | 100pF 5% 50V | C61 | | 470pF 5% 50V |
| 26 | | 400 550/ 50/ | C60 | | 10μF 20% 25V Bipola |
| C4- | 4000409 | 56pF 5% 50V | C59 | | 100nF 10% 25V |
| 23 | | 27pF 5% 50V | C58 | | 2.2µF 20% 50V |
| 2 | | 220pF 5% 50V | C55 | | 100nF 10% 25V |

PCB 57, 8008372 Operation Panel

PCB 58, 8008373 Display & IR

| ΙC1Δ | 8341025 | 150 | 4094 | 1C4Δ | 8342297 | 150 | 74HC147 | |
|-------------|------------------------------------|--|---|--|--|---|---|---|
| IC2 | 8341165 | 151 | U2506B | IC5 | 8341098 | 150 | LM 358 | |
| IC3 | 8341857 | 151 | LM 339 | IC6∆ | 8341036 | 149 | 4071 | |
| TR1- | 8320755 | 51 | BC 847B | TR11 | 8320755 | 51 | BC 847B | |
| TR2 | | | | TR15- | 8320755 | 51 | BC 847B | |
| TR4- | 8320740 | 51 | BF 840 | TR16 | | | | |
| TR5 | | | | TR18 | 8320755 | 51 | BC 847B | |
| TR8- TR9 | 8320755 | 51 | BC 847B | TR20 | 8320755 | 51 | BC 847B | |
| | TR1- TR2 TR4- TR5 TR8- | IC2 8341165 IC3 8341857 TR1- 8320755 TR2 TR4- 8320740 TR5 TR8- 8320755 | TR1- 8320755 51 TR2- 8320740 51 TR5- 8320755 51 | TR1- 8320755 51 BC 847B TR2- 8320740 51 BF 840 TR5- TR8- 8320755 51 BC 847B | IC2 8341165 151 U2506B IC5 IC3 8341857 151 LM 339 IC6Δ TR1- TR2 TR4- 8320755 TR4- 8320740 51 BF 840 TR16 TR5 TR8- 8320755 TR8- 8320755 TR8- R18 TR20 | IC2 8341165 151 U2506B IC5 8341098 IC3 8341857 151 LM 339 IC6Δ 8341036 TR1- 8320755 51 BC 847B TR11 8320755 TR2 TR15- 8320755 8320755 TR4- 8320740 51 BF 840 TR16 TR16 TR5 TR18 8320755 TR18 8320755 TR8- 8320755 51 BC 847B TR20 8320755 | IC2 8341165 151 U2506B IC5 8341098 150 IC3 8341857 151 LM 339 IC6Δ 8341036 149 TR1- 8320755 51 BC 847B TR11 8320755 51 TR2 TR15- 8320755 51 TR4- 8320740 51 BF 840 TR16 TR5 TR18 8320755 51 TR8- 8320755 51 BC 847B TR20 8320755 51 | IC2 8341165 151 U2506B IC5 8341098 150 LM 358 IC3 8341857 151 LM 339 IC6Δ 8341036 149 4071 TR1- 8320755 51 BC 847B TR11 8320755 51 BC 847B TR2- TR15- 8320755 51 BC 847B TR4- 8320740 51 BF 840 TR16 TR5- TR18 8320755 51 BC 847B TR8- 8320755 51 BC 847B TR20 8320755 51 BC 847B |

[∆] indicates that static electricity may destroy the component

| PE1 | 8330338 | 73 | BPW 16N-AS12 | | | | |
|--|--|--|---|---|--|---|---|
| | | | | D42 | 0000100 | 350 | 11 4440 |
| D1 | | | LL 4148 | D19- D2 4 | 8300482 | 250 | LL 4148 |
| D2 | 8330150 | | | D24 D25- | 8330322 | 250 | IR detector |
| D3- | 8300482 | 250 | LL 4148 | | 0330322 | 230 | in detector |
| D6 | | | | D26 | | | |
| DP1A | 8330337 | | Dotmatrix display | | | | |
| DP2 | 8330346 | | LED display | | | | |
| | | | | | | | |
| R93 | | | 1% 1/4W | | | | |
| R94 | 5021512 | 220Ω | 1% 1/4W | | | | |
| C1- | 4000404 | 22pF | 5% 50V | C24 | 4200525 | 22µF | 20% 10V |
| C4 | 1000101 | | 3,000 | C25 | | | 20% 10V |
| C5- | 4000420 | 470pl | F 5% 50V | C26 | | • | 20% 10V |
| C7 | . 200 120 | | | C27- | 4010237 | | |
| C8 | 4000424 | 1nF 5 | % 50V | C30 | | | |
| C9 | 4010237 | | | C31- | 4010274 | 100n | F -20+80% 25V |
| C10 | | | F 5% 50V | C32 | | | |
| C11- | 4010271 | 10nF | 10% 50V | C33- | 4000412 | 100p | F 5% 50V |
| C13 | | | | C34 | | | |
| C14 | 4010274 | 100nl | F-20+80% 25V | C35 | 4010274 | 100n | F -20+80% 25V |
| C15 | 4010271 | 10nF | 10% 50V | C36 | 4000416 | 220p | F 5% 50V |
| C16- | 4010274 | 100nl | F -20+80% 25V | C37- | 4010274 | 100n | F-20+80% 25V |
| C19 | | | | C38 | | | |
| C20- | 4200403 | 100µl | F 20% 25V | C39 | | | F 20% 25V |
| C21 | | | | C40 | | | 10% 50V |
| C22 | | | 20% 10V | C41 | 4010274 | 100n | F -20+80% 25V |
| C23 | 4200515 | 4.7µF | 20% 25 V | | | | |
| L1- | 8020768 | Coil 4 | 155KHz | L3 | 8020807 | Coil | 10µH 10% |
| L2 | | 2011 | ,55,11,12 | L4 | | | 3.3µH 5% |
| | | | | | | | |
| P63 | 7221119 | Socke | et 12/12 pole | | | | |
| P74 | 6276866 | Plug | 10 pole | | | | |
| CP1- | 7530128 | Cont | act nin | | | | |
| CP10 | 7330120 | Com | act piit | | | | |
| IC1 | 8342822 | 150 | MC 33079 | | | | |
| | | 40 | DC 227 25 | TDO | 0220755 | F4 | DC 947P |
| TD4 | 022455 | | BC 327-25 | TR8- | 8320755 | 51 | BC 847B |
| TR1 | 8320552 | | DC 9470 | TD 13 | | | |
| TR2 | 8320755 | 51 | | TR13 | 9220011 | E4 | RC 857P |
| TR2 TR3 | 8320755 8320507 | 51 18 | BC 337-25 | TR14 | 8320811 8320755 | | |
| TR2 TR3 TR4 | 8320755 8320507 8320811 | 51 18 51 | BC 337-25 BC 857B | | 8320811 8320755 | | BC 857B BC 847B |
| TR2 TR3 | 8320755 8320507 | 51 18 51 | BC 337-25 | TR14 | | | |
| TR2 TR3 TR4 TR6- TR7 | 8320755 8320507 8320811 8320941 | 51 7 18 51 51 | BC 337-25 BC 857B 25C 4213 | TR14 TR15 | 8320755 | 51 | BC 847B |
| TR2 TR3 TR4 TR6- TR7 | 8320755 8320507 8320811 8320941 | 51 18 51 51 51 | BC 337-25 BC 857B 2SC 4213 LL 4148 | TR14 TR15 | 8320755 | 250 | BC 847B |
| TR2 TR3 TR4 TR6- TR7 ——————————————————————————————————— | 8320755 8320507 8320811 8320941 8300482 8300644 | 51 18 51 51 51 2 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W | TR14 TR15 | 8320755 8300482 8300562 | 250 250 | BC 847B LL 4148 Z5.6V 2% 0 .5V |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 | 8320755 8320507 8320811 8320941 8300482 8300482 8300482 | 51 18 51 51 51 2 250 4 250 2 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 | TR14 TR15 D8 D9 D10 | 8320755 8300482 8300562 8300482 | 250 250 250 | LL 4148 Z5.6V 2% 0 .5\ LL 4148 |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 | 8320755 8320507 8320811 8320941 8300482 8300482 8300644 8300644 | 2 250 4 250 2 250 4 250 4 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- | 8320755 8300482 8300562 | 250 250 250 | LL 4148 Z5.6V 2% 0 .5\ LL 4148 |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 | 8320755 8320507 8320811 8320941 8300482 8300482 8300482 | 2 250 4 250 2 250 4 250 4 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W | TR14 TR15 D8 D9 D10 | 8320755 8300482 8300562 8300482 | 250 250 250 | LL 4148 Z5.6V 2% 0 .5\ LL 4148 |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 | 2 250 2 250 2 250 4 250 2 250 4 250 2 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- | 8320755 8300482 8300562 8300482 8300520 | 51 250 250 250 250 | LL 4148 Z5.6V 2% 0 .5\ LL 4148 |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 D7 | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 | 2 250 2 250 2 250 4 250 2 250 4 250 2 250 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W Z5.6V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- D12 | 8320755 8300482 8300562 8300482 8300520 | 51 250 250 250 250 | LL 4148 Z5.6V 2% 0 .5V LL 4148 Z6.8V 5% 0 .5V |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 D7 | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 501163 | 2 250 4 250 2 250 4 250 2 250 1 1 1ΚΩ | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W Z5.6V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- D12 | 8320755 8300482 8300562 8300520 5021511 | 51 250 250 250 250 | LL 4148 Z5.6V 2% 0 .5V LL 4148 Z6.8V 5% 0 .5V |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 D7 | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 501163 | 2 250 4 250 2 250 4 250 2 250 1 1 1ΚΩ | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W Z5.6V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- D12 R20- R21 | 8320755 8300482 8300562 8300520 5021511 | 51 250 250 250 250 470 | BC 847B LL 4148 |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 D7 R1- R4 R5- | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 501163 | 2 250 1 250 2 250 1 250 2 250 1 1ΚΩ 3 1588 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W Z5.6V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- D12 R20- R21 R22 | 8320755 8300482 8300562 8300520 5021511 5021490 5012309 | 250 250 250 250 250 250 250 | BC 847B LL 4148 Z5.6V 2% 0 .5V LL 4148 Z6.8V 5% 0 .5V |
| TR2 TR3 TR4 TR6- TR7 D1 D2 D3 D4 D7 R1- R4 R5- R6 | 8320755 8320507 8320811 8320941 8300482 8300644 8300644 8300562 501163 501185 | 2 250 1 250 2 250 1 250 2 250 1 1ΚΩ 3 1588 9 5.36 | BC 337-25 BC 857B 2SC 4213 LL 4148 Z6.2V 2% 0.5W LL 4148 Z6.2V 2% 0.5W Z5.6V 2% 0.5W | TR14 TR15 D8 D9 D10 D11- D12 R20- R21 R22 R26 | 8320755 8300482 8300562 8300520 5021511 5021490 5012305 5011990 | 51 250 250 250 250 250 250 250 3 5.36 8.25 | BC 847B LL 4148 |

[△] indicates that static electricity may

destroy the component

PCB 59, 8008855 Camcorder Interface & Headphone

| 18 | 136 | 150 | 207 | 250 | <u>r</u> 1 | ET BETT | |
|-------|-----|-----|-----|-----|------------|---------|--|
| E B C | = | 1- | 50 | C | | | |

Resistors not referred to are standard, see page 3-27

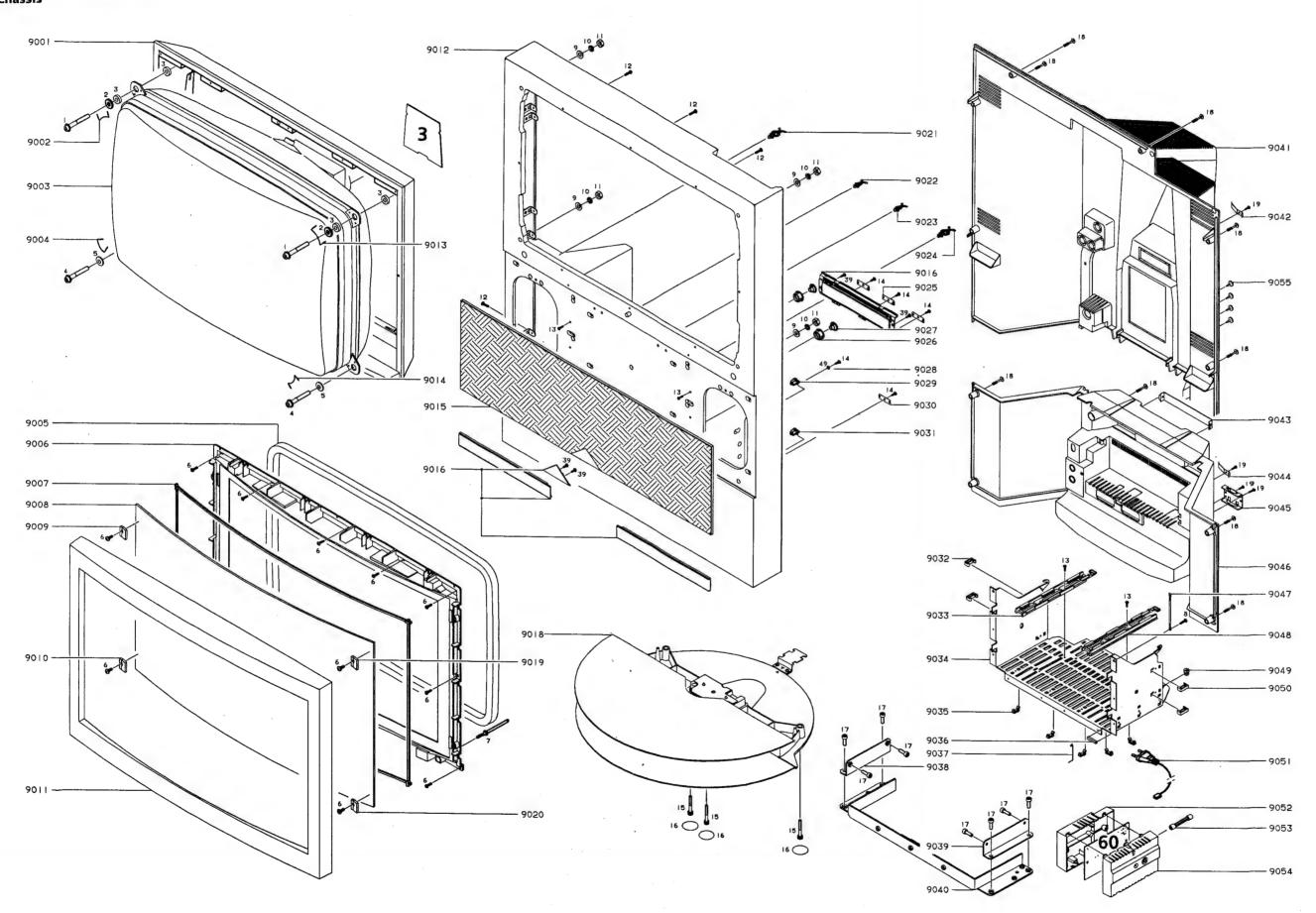
| 1101 | s not referred to are standard, see p | .ugc 3 2/ | |
|-----------|---------------------------------------|-----------|---------------------------|
| R36 | 5021524 47Ω 1% 1/4W | R77 | 5021508 47KΩ 1% 1/4W |
| R41 | 5021524 47Ω 1% 1/4W | R82 | 5021484 100Ω 1% 1/4W |
| R42- | 5021511 470Ω 1% 1/4W | R83 | 5021391 75Ω 1% 1/4W |
| R43 | | R84 | 5021492 2.7KΩ 1% 1/4W |
| R45 | 5011631 1KΩ 1% 1/4W | R89 | 5021511 470Ω 1% 1/4W |
| R51 | 5021524 47Ω 1% 1/4W | R90 | 5021509 84.5Ω 1% 1/4W |
| R56 | 5021524 47Ω 1% 1/4W | R91 | 5021492 2.7KΩ 1% 1/4W |
| R57- | 5021511 470Ω 1% 1/4W | R96 | 5021511 470Ω 1% 1/4W |
| R58 | | R97 | 5021391 75Ω 1% 1/4W |
| R64 | 5012200 2.2KΩ 1% 1/4W | R98 | 5021226 100KΩ 1% 1/4W |
| R70 | 5021511 470Ω 1% 1/4W | R99 | 5012365 11KΩ 1% 1/10W |
| R71 | 5021508 47KΩ 1% 1/4W | R100 | 5012307 2.2KΩ 1% 1/10W |
| R76 | 5021484 100Ω 1% 1/4W | R103 | 5021511 470Ω 1% 1/4W |
| | 4201188 220µF 20% 25V | C27- | 4010274 100nF -20+80% 25V |
| C2 | 4010274 100nF -20+80% 25V | C29 | |
| C3 | 4200688 47µF 20% 50V | C30 | 4010314 220nF -20+80% 25V |
| C4 | 4010274 100nF -20+80% 25V | C31- | 4010274 100nF -20+80% 25V |
| C5 | 4200688 47µF 20% 50V | C33 | |
| C10 | 4200517 2.2µF 20% 50V | C34 | 4010314 220nF -20+80% 25V |
| C11 | 4010237 1nF 20% 50V | C35 | 4010274 100nF -20+80% 25V |
| C12 | 4010263 2.2nF 10% 50V | C36 | 4000290 22nF 10% 50V |
| C13 | 4010237 1nF 20% 50V | C37- | 4010274 100nF -20+80% 25V |
| C14 | 4200517 2.2µF 20% 50V | C38 | |
| C15 | 4010263 2.2nF 10% 50V | C40- | 4000404 22pF 5% 50V |
| C21 | 4010271 10nF 10% 50V | C43 | |
| C22 | 4200517 2.2µF 20% 50V | C44 | 4010263 2.2nF 10 % 50V |
| C23 | 4010274 100nF -20+80% 25V | C202 | 4010274 100nF -20+80% 25\ |
| C24- | 4010237 1nF 20% 50V | C203- | 4000412 100pF 5% 50V |
| C25 | | C207 | |
| C26 | 4200517 2.2μF 20% 50V | | |
| L1- L2 | 8020916 Coil 47µH 5% 450mA | | |
| P64 | 7221064 Socket 9/9 pole | P233 | 7210802 Socket minijack |
| P86 | 7220714 Socket 7/7 pole | P234 | 3169103 Socket panel |
| P99 | 7220713 Socket 6/6 pole | | |
| IC1 | 8330295 136 K3021PG | | |
| ST1 | 8300320 207 BTB 06 | | |
| | 3152902 Holder | | |

PCB 60, 8008375 **Mains Distribution**

| P86 | 7220714 Socket 7/7 pole | P234 | 3169103 Socket panel |
|----------|--|------|----------------------|
| P99 | 7220713 Socket 6/6 pole | | |
| IC1 | 8330295 136 K3021PG | | |
| ST1 | 8300320 207 BTB 06 3152902 Holder | | |
| | 4420550 470 5200/ 2501/ | | |
| C1 C2 | 4130569 470nF 20% 250V 4130505 100nF 20% 250V | | |
| | 8021036 Coil 100µH | | |
| | 6600121 Fuse 3.15AT | | |
| | 7500223 Fuse holder | | |
| T1 | 8022295 Coil 2 x 0.4mH | | |
| T2 | 8022328 Coil 2 x 30mH | | |
| | | | |

| | | | | 7704440 5 1 4 2/2 mala | Standard resistors | | 1 | x10 | x100 | x1k | x10k | x100k | x1M | x10M |
|-----------------------------|-------------------|---|-------------|--|--|--------------------------|---|--|---|--|--|--|--|-----------------------|
| | P65 P66 P67 | 7219083 Socket 2 pole 7220897 Socket 2/2 pole 7221057 Socket 2/3 pole | P68 P69 | 7221149 Socket 2/2 pole 7221077 Socket 4/4 pole | Resistors 5% 1/2W | 1.0 1.2 1.5 | x1 5011406 5010727 | 5011000 5011001 5011002 | 5011013 5011014 5011015 | 5011028 5011030 5011031 | 5011044 | 5010313 5011058 | 5011069 5010421 5011071 | 5011083 |
| | S1 | 7450094 Mains switch | | | | 1.8 2.2 2.7 | 5010857 5011335 5011612 | 5010787 5010708 5010803 | 5011016 5010815 5011018 | 5011033 5011034 5010055 | 5011047 5011048 5011049 | 5011062 | 5011072 5011074 5011075 5010381 | |
| PCB 80, 8008337 | IC1 | 8341041 150 LM 324 | | | | 3.3 3.9 4.7 | 5010255 5010765 | 5011007 5010782 5011009 5011010 | 5011019 5011021 5011022 5011023 | 5011037 5010700 5010035 5011041 | | 5011065 5011066 | 5010392 5011078 5011079 | |
| Motor Stand Control | IC2 | 8342508 136 L 2720 | | | | 5.6 6.8 8.2 | 5010874 | 5011011 5011012 | 5011024 5011026 | 5011042 5011043 | 5010038 | | 5011080 5011081 | x10M |
| | TR1- TR4 | 8320497 18 BC 547B | | | Resistors 5% 1/4W | 1.0 1.2 1.5 | x1 5010592 5011348 | x10 5010506 5010595 5010468 | x100 5010065 5010128 5010057 | x1k 5010040 5010153 5010247 | x10k 5010059 5010046 5010053 | x100k 5010049 5010047 5010063 | x1M 5010054 5010665 5010093 | 5010638 |
| | D5 | 8300563 250 Z5.1V 2% 0.5W | | | | 1.8 2.2 2.7 | 5010682 5010925 | 5010822 5010448 5010403 | 5010362 5010092 5010000 | 5010066 5010064 5010298 | 5010135 5010079 5010141 | 5010072 5010120 5010083 | 5010791 5010245 5010431 | |
| | R1- R2 | 5012284 261KΩ 1% 1/8W | R13- R16 | 5011599 49.9KΩ 1% 1/8W | | 3.3 3.9 4.7 | 5011860 5011377 5010888 | 5010253 5010622 5010411 | 5010044 5010070 5010058 | 5010076 5010069 5010048 | 5010075 5010060 5010045 | 5010117 5010073 5010077 5010071 | 5010848 5010714 5011513 5010658 | |
| | R3- R4 R7- | 5011599 49.9KΩ 1% 1/8W 5011603 787KΩ 1% 1/8W | R45- R46 | 5011281 0.82Ω 5% 1/4W | | 5.6 6.8 8.2 | 5010706 5010904 5010880 | 5010151 5010039 5010056 | 5010067 5010144 5010068 | 5010041 5010052 5010154 | 5010061 5010062 5010091 | 5010071 5010074 5010505 | 3010030 | |
| | R8 | | | | Resistors 5% 1/8W | | x1 | x10 | x100 | x1k | x10k | x100k 5011440 | x1M 5011459 | x10M 5020875 |
| | R9- R12 | 5011281 0.82Ω 5% 1/4W | | | | 1.0 1.2 1.5 | | 5011464 5011351 5011463 | 5011357 5011084 5011443 5011350 | 5010816 5011442 5011178 5011361 | 5010935 5011338 5011364 5011344 | 5011341 5011398 | 5011175 5011460 | 3020673 |
| | C1 | 4010166 100nF -20+80% 50V | C9 | 4000287 220nF -20+80% 25V | | 2.2 2.7 | 5011032 | 5011376 5011471 | 5010886 5011355 | 5011353 5011362 | 5010833 5011366 | 5011468 5011369 5011370 | 5011342 5011478 | |
| | C2 C3- C6 | 4201173 10μF 20% 50V 4000287 220nF -20+80% 25V | C10 C12 | 4010166 100nF -20+80% 50V 4130526 100nF 5% 63V | | 3.3 3.9 4.7 | 5011363 | 5011347 5011438 5011038 | 5011337 5011817 5011441 | 5010827 5011157 5011363 | 5011346 5011457 5010937 | 5011371 5011372 5011343 | 5011462 5020876 5011611 | |
| | C7- C8 | 4000241 100pF 5% 50V | | | | 5.6 6.8 8.2 | | 5011412 5011356 5011466 | 5011358 5011336 5011354 | 5010885 5010839 5011339 | | 5011340 5011458 5011373 | | |
| | L1 | 8020916 Coil 47µH 5% 450mAT | | | Resistors SMD 2% 1/8W SMD 5% 1/8W | 1.0 | 5% x1 5011623 5011624 5011625 | 2% x10 5011647 5011648 5011649 | 2% x100 5011218 5011669 5011219 | 2% x1k 5011227 5011681 | 2% x10k 5011241 5011689 | 2% x100k 5011256 5011694 5011257 | 5% x1M 5011267 5011707 5011708 | 2% x10M 5011730 |
| | F1 | 6600142 Fuse 630mAT | | | Glue dots, approx. 200, part no. 3181932 | 1.2 1.3 1.5 1.6 | 5011625 5011626 5011627 5011628 | 5011650 5011651 5011652 | | 5011682 5011683 5011228 5011684 | 5011490 5011242 5011243 5011690 | 5011258 5011259 | 5011709 5011710 5011711 | |
| | P180 P181 | 7221045 Socket 5/5 pole 7211054 Socket 6 pole | | | | 1.8 2.0 2.2 | 5011629 5011630 5011216 | 5011653 5011654 5011655 | 5011672 5011673 5011674 | 5011229 5011685 5011230 | 5011244 5011691 5011245 | 5011260 5011696 5011261 | 5011714 | |
| | | | | | | 2.4 2.7 3.0 | 5011634 5011635 5011731 | 5011656 5011657 5011658 5011659 | 5011497 | 5011686 5011231 5011500 5011232 | 5011246 5011247 5011692 5011248 | 5011697 5011262 5011698 5011263 | 5011715 5011716 5011717 5011718 | |
| PCB 81, 8008338 Motor Stand | | <u> </u> | | | | 3.3 3.6 3.9 | 5011217 5011636 5011637 | 5011660 5011661 | 5011677 5011221 | 5011687 5011233 | 5011249 5011491 | 5011264 5011699 | 5011719 5011720 | |
| Set of modules | | 1 set of modules consists of PCB PCB14 and mechanical part pos | | B3-PCB4-PCB5-PCB6-PCB7-PCB12- | | 4.3 4.7 5.1 | 5011638 5011639 5011640 5011641 | 5011663 | 5011678 | | 5011493 | | | |
| | | 8008511 For system B/G 8008977 For system I | | | | 5.6 6.2 6.8 | | | 5011225 | 5011238 | 5011253 | 5011704 | 5011727 | |
| | | 8008997 For system B/G/L/L' 8008996 For system B/G/L/L'/I | | | | 7.5 8.2 9.1 | 5011644 5011645 5011646 | 5011667 5011270 5011668 | 5011679 5011226 5011680 | 5011240 5011489 | 5011254 | 501 1266 501 1706 | 5011728 5011729 | |
| | | 8008983 For system B/G/D/K/M/ | 1 | | Resistors SMD 5% 1/10W | 0.0 | x1 6000072 | x10 | x100 | x1k | x10k | x100k | x1M | x10M 5012275 |
| | | | | | Glue dots, approx. 200, part no. 3181932 | 1.0 1.2 | 5012326 | | | | | | 5012267 | 3012273 |
| | | | | | | 1.5 1.8 2.2 2.7 | | 5011923 5011924 5011925 | | | | | 5012220 | |
| | | | | | | 2.7 3.3 3.9 4.7 | | 5011925 5011926 5011927 5011928 | | | | 501 1975 | | |
| | | | | | | 5.6 6.8 8.2 | | 5011929 5011930 501193 | 5011942 | 5011954 | 5011964 5011965 5011966 5011967 | 501 1976 501 1977 501 1978 501 1979 | 5012271 7 5012272 8 5012273 9 5012274 | |

LIST OF MECHANICAL PARTS Chassis



| | Cha | | ie | |
|---|------|-----|----|--|
| • | -IId | 122 | 12 | |

BANG & OLUFSEN

| ** | | Pearly blue Pearly red Pearly green Pearly black Metallio |
|-------|---------|---|
| 9016 | ** | Set of profiles, cassette flap and triangle |
| | 3320239 | Loudspeaker panel, pearly blue |
| | | Loudspeaker panel, pearly red |
| | | Loudspeaker panel, pearly green |
| | | Loudspeaker panel, pearly black |
| 9015 | | Loudspeaker panel, metallic grey |
| 9014 | | Holder f/degaussing coil |
| 9013 | | Holder f/degaussing coil |
| | | Wall, pearly blue |
| | | Wall, pearly red |
| | 3320177 | Wall, pearly green |
| | 3320178 | Wall, pearly black |
| 9012* | 3320272 | Wall, metallic grey |
| 9011 | 3320238 | Frame |
| 9010 | 3031484 | Plate |
| 9009 | 3031484 | Plate |
| 9008 | 3451494 | Contrast screen, coated |
| 9007 | 3950056 | Profile |
| 9006 | 3320296 | Frame f/contrast screen incl. pos. no. 9005 and 9007 |
| 9005 | 3950055 | |
| 9004 | 3152949 | Holder f/degaussing coil |
| | 6270648 | EHT cable |
| | | Cable holder f/degaussing coil 3.6 x 290mm |
| | 8022341 | Degaussing coil |
| | 2816275 | Clamp f/ground current |
| | 2810189 | Spring f/ground current |
| | 7510047 | Ground current |
| 9003 | | Picture tube |
| 9002 | 3152949 | Holder f/degaussing coil |
| 9001 | 3320303 | Frame |
| | | |

| ** | Pearly blue | Pearly red | Pearly green | Pearly black | Metallic grey |
|------------------|-------------|------------|--------------|--------------|---------------|
| VHS/PAL/SECAM/DS | 3164932 | 3164964 | 3164996 | 3164997 | 3164998 |
| VHS/PAL/SECAM | 3164854 | 3162290 | 3162350 | 3162351 | 3162406 |
| VHS/PAL/DS | 3164991 | 3164992 | 3164993 | 3164994 | 3164995 |
| VHS/PAL | 3164980 | 3162407 | 3162408 | 3162409 | 3162410 |

| 9018 | 3458903 | Base cover plate | |
|------|---------|---------------------|---|
| 9019 | 3031484 | Plate | |
| 9020 | 3031484 | Plate | |
| 9021 | 3152828 | Wire holder | |
| 9022 | 3152827 | Wire holder | |
| 9023 | 3152827 | Wire holder | |
| 9024 | 3152828 | Wire holder | |
| 9025 | 2816285 | Spring | |
| 9026 | 2930119 | Rubber bushing | |
| 9027 | 2930120 | Bushing | |
| 9028 | 2816285 | Spring | |
| 9029 | 3152952 | Holder f/VTR | |
| 9030 | 2816285 | Spring | |
| 9031 | 3152952 | Holder f/VTR | |
| 9032 | 3152995 | Wire holder | |
| 9033 | 3152964 | Guide rail, left | |
| 9034 | 3152996 | Holder f/chassis | |
| 9035 | 3152986 | Wire holder | - |
| 9036 | 3950048 | Profil | |
| 9037 | 2816275 | Ground spring | |
| 9038 | 3152950 | Holder | |
| 9039 | 3152950 | Holder | |
| 9040 | 3454572 | Frame | |
| 9041 | 3430654 | Back cover, upper | |
| 9042 | 3152960 | Holder f/scart plug | |
| 9043 | 3152957 | Cable holder | |
| 9044 | 3152960 | Holder f/scart plug | |
| 9045 | 3152958 | Cable holder | |
| 9046 | 3430629 | Back cover, lower | |
| 9047 | 6032951 | | |
| 9048 | 3152963 | Guide rail, right | |
| 9049 | 2938277 | Wire holder, rubber | |
| | | | |

| 9050 | 3152995 | Wire holder |
|------|---------|---------------------------|
| 9051 | 6100325 | Mains lead w/filter |
| | 6100324 | Mains lead AUS |
| 9052 | 3152954 | Holder f/PCB 60 |
| 9053 | 2776404 | Push button f/main switch |
| 9054 | 3152953 | Lid f/PCB 60 |

03Modul 8008364 PCB 3, Video Output

60Modul 8008375 PCB 60, Mains Distribution

Survey of screws etc.

| 1 | 2058020 Screw 8 x 60mm |
|----|----------------------------------|
| 2 | 2622497 Washer |
| 3 | 2930121 Bushing |
| 4 | 2058021 Screw 8 x 55mm |
| 5 | 2622498 Washer |
| 6 | 2019007 Screw 4 x 16mm |
| 7 | 2052000 Screw 5 x 5.8/4.9 x 63mm |
| 8 | 2019020 Screw 4 x 10mm |
| 9 | 2622003 Washer |
| 10 | 2624065 Spring washer |
| 11 | 2380156 Nut |
| 12 | 2015163 Screw 4 x 20mm |
| 13 | 2015156 Screw 3.5 x 12mm |
| 14 | 2019022 Screw 4 x 8mm |
| 15 | 2046037 Screw 6 x 40mm |
| 16 | 3947565 Wafer |
| 17 | 2046039 Screw 6 x 18mm |
| 18 | 2021012 Screw 5 x 25mm |
| 19 | 2013137 Screw 3 x 10mm |
| 39 | 2011058 Screw 2.5 x 5mm |
| 40 | 2622024 Washer |
| | |

* Lacquer code nos. for pos. no. 9012 Wall

| Colour: Colour code: Lacquer: | Metallic grey Dupont AB BO941 Centari 600 | Colour: Colour code: Lacquer: | Pearly red Dupont AB 35104 Centari 600 pearl |
|-------------------------------------|---|-------------------------------------|--|
| Tone Colour | 1 litre | Tone colour | 1 litre |
| AM 13 | 242.6 | AM 66 | 119.4 |
| AM 7 | 281.6 | AM 72 | 233.6 |
| AM 15 | 313.0 | AM 5 | 285.0 |
| AM 90 | 315.6 | AM 58 | 291.0 |
| AM 5 | 325.6 | AM 10 | 291.8 |
| AB 150 | 966.0 | AB 150 | 947.0 |
| Colour: Colour code: | Pearly black Dupont AB HO697 | Colour: Colour code: | Pearly blue Dupont AB BO944 Centari 600 |
| Lacquer: | Centari 600 | Lacquer: | |
| Tone Colour | 1 litre | Tone colour | 1 litre |
| AM 5 | 127.3 | AM 27 | 224.0 |
| AM 73 | 144.9 | AM 74 | 307.0 |
| AB 150 | 552.9 | AM 21 | 373.4 |
| AB 160 | 928.2 | AM 62 | 403.4 |
| | | AM 46 | 407.4 |
| | | AM 5 | 412.4 |
| Colour: | Pearly green | AM 20 | 452.4 |
| Colour code: | Dupont AB 75103 | AB 150 | 945.0 |
| Lacquer: | Centari 600 pearl | | |
| Tone Colour | 1 litre | | |
| AM 30 | 212.4 | | |
| AM 27 | 373.4 | | |
| AM 5 | 402.4 | | |
| AM 74 | 426.5 | | |
| AM 14 | 450.2 | | |
| AM 46 | 455.1 | | |
| AB 150 | 945.9 | | |

El-Chassis

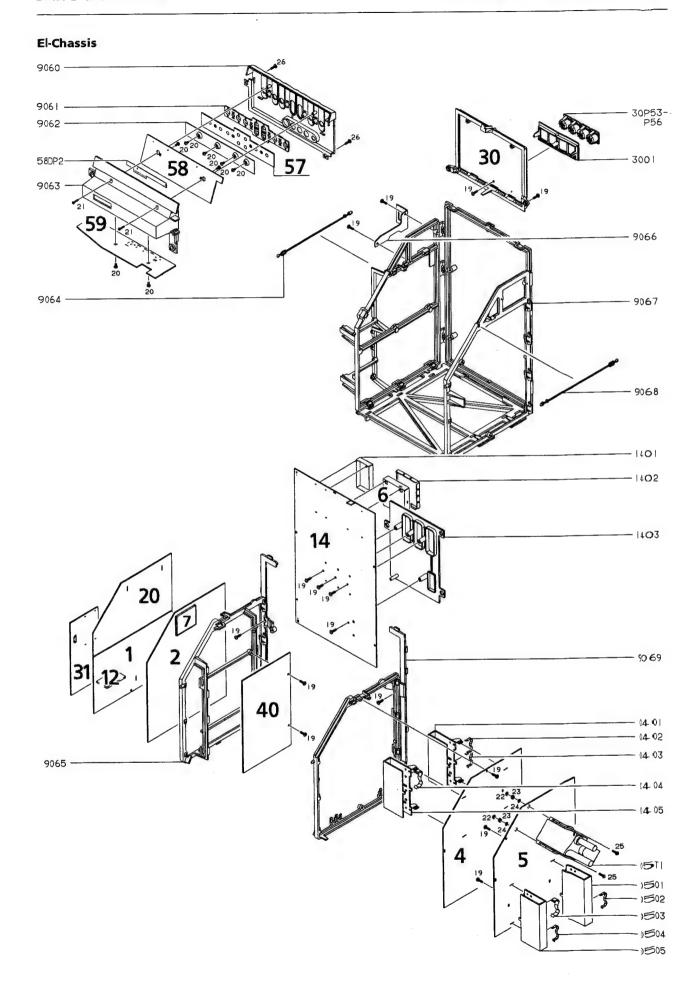
```
9060
          3164946 Cover f/display
9061
          2776398 Set of buttons
          2572049 Spacer
9063
          3131349 House f/display
 9064
          3152992 Service strap
9065
          3152970 Holder f/PCB's
          3152985 Holder f/positioner
9066
9067
          3320240 Frame f/chassis
9068
          3152992 Service strap
9069
          3152969 Holder f/PCB's
01Modul 8008323 PCB 1, Tuner & IF system B/G
          8008324 PCB 1, Tuner & IF system I
          8008327 PCB 1, Tuner & IF system B/G/L/L'
          8008326 PCB 1, Tuner & IF system B/G/L/L'/I
          8008325 PCB 1, Tuner & IF system B/G/D/K/M/I
                   (PCB 12 is part of PCB 1)
02Modul 8008842 PCB 2, Video/Chroma & Teletext (incl. PCB 7)
04Modul 8008365 PCB 4, Power Supply
          3358315 Heat sink
0402
          2816195 Spring clip
0403
         2816195 Spring clip
0404
         2816154 Spring clip
0405
         3358315 Heat sink
05Modul 8008839 PCB 5, Deflection & EHT
         3358315 Heat sink
0502
         2816195 Spring clip
0503
         2816154 Spring clip
0504
         2816195 Spring clip
0505
         3358315 Heat sink
05T1
         8014136 Transformer EHT
          6270649 Focus cable, long
          6270650 Focus cable, short
06Modul 8008873 PCB 6, Main Microcomputer
                  (See page 3-10 regarding PCB 6)
07Modul 8008867 Teletext Processing
12Modul 8008328 PCB 12, IF system B/G
         8008329 PCB 12, IF system I
         8008332 PCB 12, IF system B/G/L/L'
         8008331 PCB 12, IF system B/G/L/L'/I
         8008330 PCB 12, IF system B/G/D/K/M/I
14Modul 8008834 PCB 14, AV Switch (incl. PCB 6)
                  (see page 3-10 regarding PCB 6)
         3302493 Screen
1401
1402
         3162339 Lid
1403
         3152965 Holder
20Modul 8008334 PCB 20, Satellite
```

30Modul 8008335 PCB 30, Dolby Surround 3152967 Holder

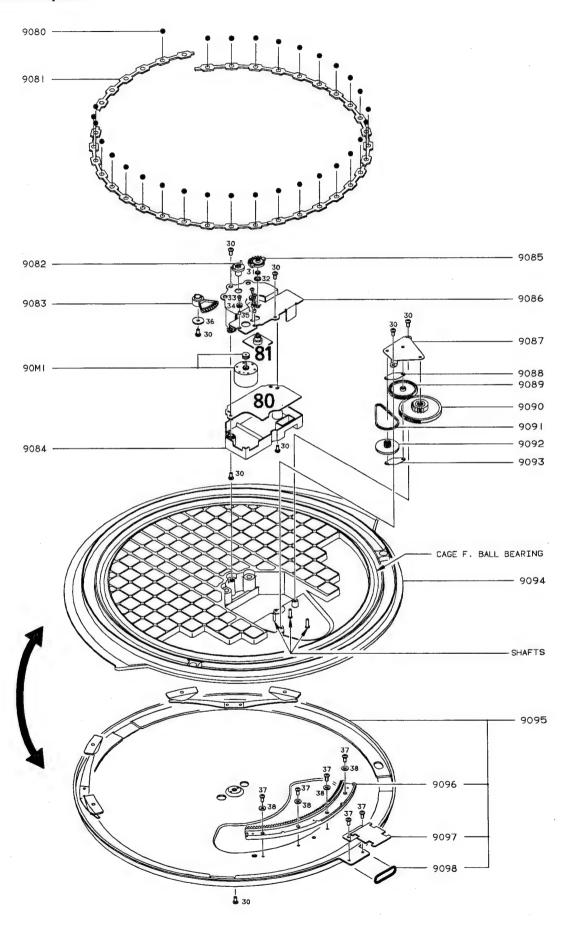
30P53- 30P56 7210518 DIN 8 pole 31Modul 8007809 PCB 31, Nicam 40Modul 8008336 PCB 40, Picture in Picture 57Modul 8008372 PCB 57, Operation Panel 58Modul 8008373 PCB 58, Display & IR 58DP2 8330346 LED display 59Modul 8008855 PCB 59, Camcorder Interface & Headphone

Survey of screws etc.

| 19 | 2013137 \$ | crew 3 x 10mm |
|----|------------|-----------------|
| 20 | 2013153 S | crew 3 x 6mm |
| 21 | 2013220 S | crew 2.5 x 10mm |
| 22 | 2380112 N | lut |
| 23 | 2624013 S | pring washer |
| 24 | 2622117 V | Vasher |
| 25 | 2038103 S | crew 3 x 12mm |



Motorized base plate



Motorized base plate

| 9080 | 2917030 | Ball |
|------|---------|----------------------|
| 9081 | 3152942 | Holder f/balls |
| 9082 | 2993038 | Centre tap |
| 9083 | 2700128 | Gear wheel |
| 9084 | 3162464 | Cover w/plate |
| 9085 | 2700129 | Gear wheel |
| 9086 | 3152940 | Holder f/motor |
| 9087 | 3152941 | Holder f/gear wheel |
| 9088 | 3472827 | Damper f/gear wheel |
| 9089 | 2700131 | Gear wheel |
| 9090 | 2700132 | Gear wheel |
| 9091 | 2732092 | Belt |
| 9092 | 2700130 | Gear wheel f/belt |
| 9093 | 3472827 | Damper f/gear wheel |
| 9094 | 2752035 | Top plate |
| 9095 | 3454810 | Bottom plate |
| 9096 | 2700133 | Gear wheel rim |
| 9097 | 3152959 | Holder f/wire bundle |
| 9098 | 2732128 | O-Ring |
| | | |

90M1 8400210 Motor

80Modul 8008337 PCB 80, Motor Stand Control

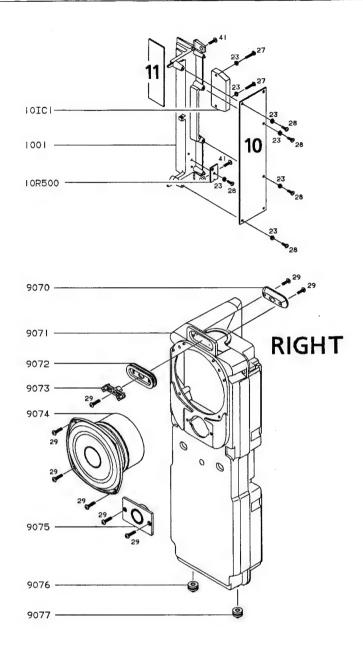
81Modul 8008338 PCB 81, Motor Stand

Survey of screws etc.

| 30 | 2042074 | Screw 4 x 8mm |
|----|---------|-------------------|
| 31 | 2380165 | Nut |
| 32 | 2622500 | Washer |
| 33 | 2036061 | Screw 2.6 x 6.5mm |
| 34 | 2938306 | Rubber bushing |
| 35 | 2930074 | Bushing |
| 36 | 2622492 | Washer |
| 37 | 2042073 | Screw 4 x 6mm |
| 38 | 2622467 | Washer |
| | | |

| LUBRICATION | |
|--|---|
| Cage for ball bearing | 3984057 Full synthetic grease (50g) |
| Tooths on gear wheel rim 9096 Full periphery of gear wheels 9089 and 9090 Rim of gear wheel 9083 | 3984049 Barrierta grease L55/3 (25g) |
| Shafts on 9094 | 3984051 Barrierta oil IS Fluid (25g) |

Sound

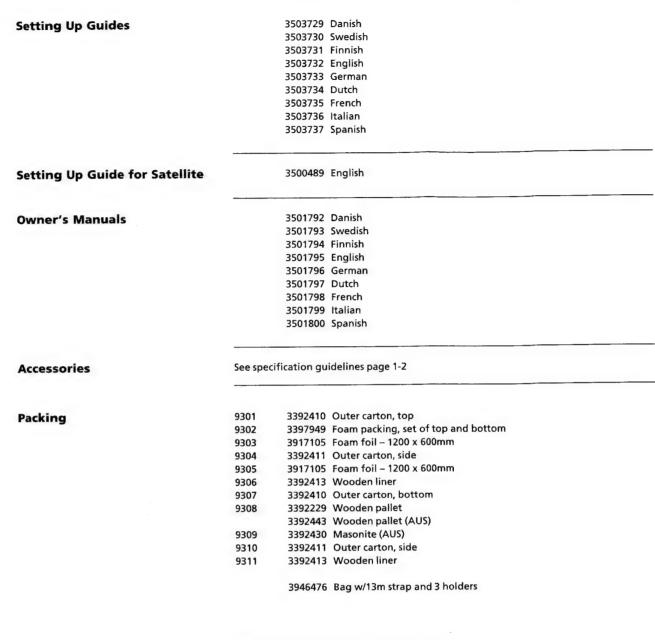


| 9070 | 3152979 | Holder | 9073 | 3152980 | Holder |
|----------|----------|------------------------|------------|---------|----------------|
| 9071 | | Loudspeaker cabinet, | 9074 | 8480261 | |
| 3071 | 3430734 | left | 9075 | | Treble speaker |
| | 3/130735 | Loudspeaker cabinet, | 3073 | 0400243 | 18mm - 8Ω |
| | 3430733 | right | 9076 | 3333033 | Rubber bushing |
| 9072 | 3333031 | • | 9077 | | Rubber bushing |
| 3072 | 3333031 | dusket | 3077 | 3333033 | |
| | | | | | |
| 10Modul | 8008369 | PCB 10, Sound Output | | | |
| 1001 | 3358317 | Holder | | | |
| | | | | | |
| 10IC1 | 8350088 | STK 4122-2 | | | |
| | | | | | |
| 10R500 | 8008151 | NTC resistor | | | |
| - | | | | | |
| 11Modul | חדכפחחפ | PCB 11, Cross Over Net | work (ARI) | | |
| Tiviodui | 0000370 | PCB 11, Closs Over Net | WOIK (ABL) | | |
| | | | | | |
| 23 | 2624013 | Spring washer | 29 | 2019018 | Screw 4 x 16mm |
| 27 | | Screw 3 x 16mm | 41 | 2015165 | Screw 5 x 15mm |
| 28 | 2013188 | Screw 3 x 8mm | | | |

Survey of screws etc.

Parts not shown

6276988 Wire bundle f/PCB1-PCB14-PCB20-PCB30-PCB31-PCB80 Survey of wire bundles Consists of: 1P27 - 14P8 1P28 - 14P9 1P72 - 31P94/95/96/97 20P25 - 14P6 30P26 -14P17 80P100 14P20 -6276989 Wire bundle f/PCB2-PCB3-PCB14-PCB40 Consists of: 2P29 - 14P5 2P30 - 14P4 2P31 - 14P3 2P32 - 14P2 2P33 - 14P7 2P34 - 3P37 2P35 - 40P36 3P40 -6276995 Wire bundle f/PCB3-PCB4-PCB5-PCB10-PCB14-PCB60 Consists of: 4P41 - 14P13 4P42 - 14P14 4P43 - 5P49 4P44 -10P58 4P46 -60P67 5P48 -14P16 5P50 - 3P38 Deflection coil 5P51 -5P73 -Deflection coil 14P18 10P57 -10P60 -Speaker 6276996 Wire bundle f/PCB14-PCB57-PCB58-PCB59 Consists of: 57P75 - 58P74 58P63 - 14P10 59P64 - 14P11 59P86 - 14P91 59P99 -14P90 6276997 Wire bundle f/PCB14-PCB60 Consists of: 14P19 - VTR Module P122 60P66 -VTR Module 60P69 -VTR Module P101 6277078 Wire bundle f/PCB5-Deflection coil 5P51 - Deflection coil

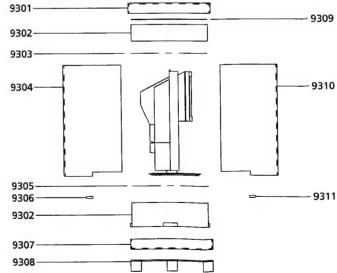


6270630 AV VTR - TV cable

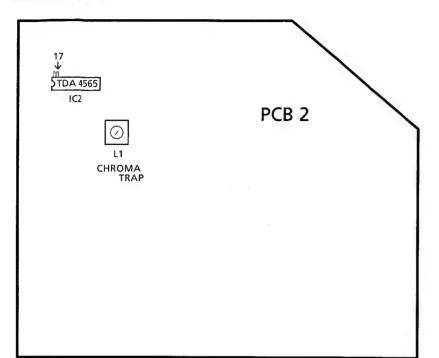
6270629 Coaxial cable VTR - TV

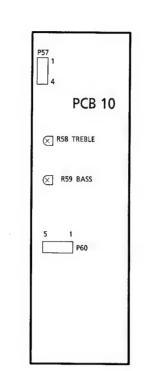


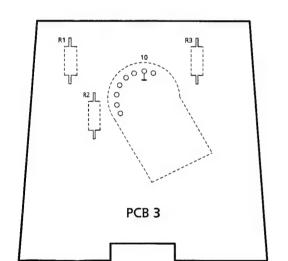
LIST OF MECHANICAL PARTS 4-8

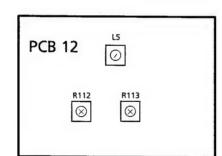


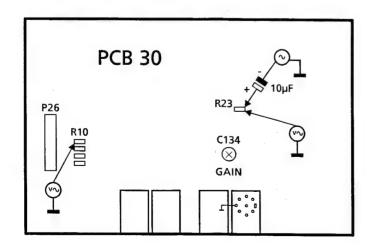
ADJUSTMENTS











SERVICE ADJUSTMENTS WITH Beo4

See the section "Brief Operation Guide" for general information on operation.

Reset

Format

Set brilliance, colour saturation and contrast to nominal values so that they can be recalled by means of *RESET* (perhaps a ADD function).

- Press of TV 20 MENU 500 500 (or 100 4200) then 100 300

Brilliance Colour Contrast 32 32 44

- Adjust by means of (), () or (), and back up with stop . Values can be stored by means of ().

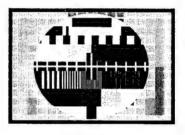
BeoVision Avant provides the opportunity to choose from six different picture formats by means of the Beo4 remote control.

"Picture adjustments" only have to be made in format 1. The other five formats will automatically adjust to format 1.

"Geometry adjustments" have to be made in all six formats.

- Connect a standard 4:3 test pattern (e.g. Philips):
- Press and toggle on stusted until the display reads FORMAT.
- shows a Bang & Olufsen optimized 14:9 picture when a standard 4:3 signal is connected:

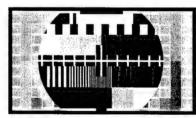
FORMAT 1





shows a full-screen 16:9 picture when a standard 4:3 signal with a black bar at the top and bottom is connected:

FORMAT 2



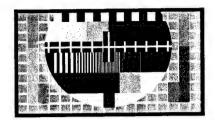
shows a full-screen 16:9 picture when a standard 4:3 signal with a black bar at the bottom of the picture is connected:

FORMAT 3



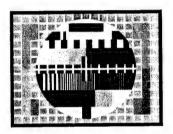
- shows a full-screen 16:9 picture when a standard 4:3 signal with a black bar at the top of the picture is connected:

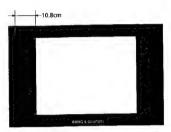
FORMAT 4



shows a standard 4:3 picture when a standard 4:3 signal is connected:

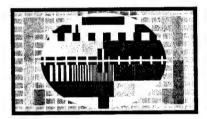
FORMAT 5



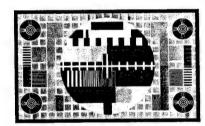


shows a full-screen 16:9 picture when a wide-screen 16:9 signal is connected:

FORMAT 6 4:3



FORMAT 6 16:9



Service mode

5-3

When the desired format has been selected, bring the TV into SERVICE MODE, thereby gaining access to the Service menu:

- Press TV TV MENU , and select the Setup line by means of the key, and then press GO TO TO TO THE GO THE GO TO THE

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape
- Press to gain access to adjustments on Monitor.

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

Picture adjustments

- Press in the Monitor service menu to gain access to picture adjustments:

Picture adjustments

- 1 Rdr XX
- 2 Gdr XX
- 3 Rcu XX
- 4 Gcu XX

Red drive 0 - 63

Green drive 0 - 63

Red cut-off balance 0 - 63

Green cut-off balance 0 - 63

- Picture adjustments shall only be made in format 1.
- Connect a standard 4:3 test pattern (e.g. Philips).

Drive

- Adjust the brilliance to the nominal value: Brilliance 32.
- Remove the colour saturation: 00.
- Adjust the red and green drive (Rdr and Gdr) to correct white level.

Cut-off balance

- Adjust the brilliance to the nominal value: Brilliance 32.
- Remove the colour saturation: 00.
- Adjust the red and green cut-off balance (Rcu and Gcu) so that the dark fields in the test pattern become colourless.

Geometry adjustments

- Press in the Monitor service menu to gain access to the geometry adjustments:

Geometry adjustments

- 1 Hph XX
- 2 Ham XX
- 3 Vam XX
- 4 Vsc 8
- 5 Vsh 31
- 6 Vsl XX
- 7 EWc XX
- 8 EWp XX
- 9 EWt XX

Horizontal amplitude 0 - 63 Vertical amplitude 0 - 63 Vertical s-correction 0 - 63

Horizontal phase 0 - 63

- Vertical shift/centring 0 63
- Vertical slope 0 63
- East/West corner 0 63
- East/West parabola 0 63
- East/West trapeze 0 63
- Geometry adjustments have to be made in all six formats.
- Connect a standard test pattern (e.g. Philips) to the selected format.
- Select geometry adjustment with a digit (1 9), and adjust by pressing or During the adjustment procedure it is possible to select a new geometry adjustment by pressing or Or Store the adjustment by pressing or and select a new adjustment or end the menu by pressing of Stop or EXIT key will get you out of service menus.

Horizontal centring/phase (Hph)

- Set the brilliance to the maximum value: Brilliance 62.
- Adjust the horizontal amplitude to the minimum width: Ham 00.
- If necessary, centre the picture as well as possible using 5S130 (coordinate 7E) in picture format 6 (see the section on Format).
- Centre the picture with horizontal phase (Hph) as a fine adjustment.
- Adjust the horizontal amplitude (Ham) to the correct width (see the section on Format).
- Readjust the horizontal phase (Hph), if necessary.

Horizontal amplitude (Ham)

Adjust the horizontal amplitude (Ham) to the correct width (see the section Horizontal centring/phase (Hph)). There is a black bar at both sides of the visible picture in the following screen formats:
 Format 1 (14:9) = 7.2 cm/2.84" at each side.
 Format 5 (4:3) = 14.4 cm/5.68" at each side.

Vertical amplitude (Vam)

- Adjust the vertical amplitude (Vam) so that the picture fits at the top (see the section on Format).

Vertical s-correction (Vsc)

- Adjust the vertical s-correction to 8 (Vsc 08).

Vertical centring (Vsh)

- Adjust the vertical centring to 31 (Vsh 31).

Vertical slope (VsI)

 Adjust the vertical slope/ramp (Vsl) so that the picture fits at the bottom (see the section on Format). The vertical amplitude (Van) is affected.

East/West corner (E/Wc)

 Adjust the East/West corner (E/Wc) to the correct geometry at the corners.

East/West parabola (E/Wp)

- Adjust the East/West parabola (E/Wp) to the correct geometry at the

East/West trapeze (E/Wt)

 Adjust the East/West trapeze (E/Wt) to the correct geometry at he sides.

ADJUSTMENT GUIDE

A standard colour test pattern must be connected when making the following adjustments unless otherwhise specified.

Service adjustments with the remote control terminal must have been made in advance.

Module 2 Video/Chroma & Teletext 4.43MHz chroma trap

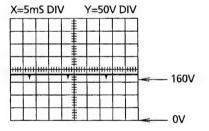
- Connect a PAL colour bar test pattern.
- Connect an oscilloscope to 2IC2 pin 17, TDA4565 (coordinate 1C). Ground on 2IC2 pin 18.
- Adjust 2L1 (coordinate 3C) to obtain the minimum 4.43MHz residue in the signal; use a nonmagnetic adjustment tool.

Module 5 Deflection & EHT Focus

- Set the brilliance and colour saturation to their nominal values (32 and 32).
- Set the contrast to the maximum value (62).
- Adjust to optimum focusing as viewed approx. 10 cm/4" from the edge of the screen by means of the focus potentiometer 5R121 (FOCUS).

G2 (Cut-off)

- Set brilliance to nominal value (32).
- Remove the AV plug from the V.TAPE socket. Also remove the 6-pole ribbon cable from the TV set (14P19 coordinate 1C) to the VTR unit. Press TOTAPE 1.
- Locate by means of an oscilloscope the test point on 3R1, 3R2 or 3R3 (oscilloscope photo) which has the highest test pulse voltage.
- Adjust the G2 (SCREEN) potentiometer 5R121 until the test pulse voltage is 160VDC (absolute maximum level).



Alternative G2 Adjustment procedure

To get a precise adjustment the procedure using an oscilloscope should be followed.

- Set the brilliance and contrast to the nominal value (32).
- Remove the AV plug from the V.TAPE socket. Also remove the 6-pole ribbon cable from the TV set (14P19 coordinate 1C) to the VTR unit.
- Cover 58PE1 (photo-transistor) on PCB 58 Display & IR.
- Use a voltmeter (Ri > 1Mohm) for measuring the voltage drop across 3R1, 3R2 and 3R3.
- Adjust by means of the G2 potentiometer 5R121 until there is a voltage of 2V across that resistor 3R1, 3R2 or 3R3, which has the smallest voltage drop.

Module 30 Dolby Processing Gain

To be adjusted only in connection with replacement of 30IC8, 30C1, 30C18, 30C19, 30C12, 30C13, 30C134.

- Remove/lift SMD resistor 30R23 (coordinate 2B).
- Connect an audio oscillator to the solder-pad of 30R23, that leads to 30IC8 pin 53, via a 10μF electrolytic capacitor with + facing towards the solder-pad (see adjust figure page 5-1). Ground on Power Link pin 2.
- Set the audio oscillator to generate 5kHz, approx. 200mV RMS.
- Connect an AF voltmeter to the solder-pad of 30R23, that leads to 30IC8 pin 53 (AF surround input), read the level, and make a note of it.
- Connect the AF voltmeter to 30R10 (AF surround output), and adjust 30C134 until the same level is measured at 30R10 (output) as was measured at 30R23 (input).
- Check that the gain is within ±3dB by repeating the measurement at 3kHz and 1kHz.
- Reinstall 30R23.

Module 40 Picture in Picture Cloche filter

- Connect a SECAM test pattern (Vert. colour bar).
- Adjust 40L1 until the optimum colour graduations in the colour bar have been achieved.
- Connect a SECAM test pattern (Horiz. colour bar) for control if necessary, and check by means of an oscilloscope wether all colour bars have the same level.

Module 10, Output Amplifier Adjustment of bass/treble speaker level

This adjustment to be carried out only when replacing 10IC1, 10R58, 10R59 or one of the speaker units. Module 10, Output Amplifier, is the same module in the right and left channels.

The new speaker unit will have a rated value stamped on its back, and this value has to be used when making the adjustment.

- Remove the A/V plug in V.TAPE and connect an audio oscillator to:

A/V plug:

14P21 pin 2

Audio R (right) in

14P21 pin 4

Audio ground

14P21 pin 6

Audio L (left) in

Press vtape: and toggle on use until the display reads SPEAKER, and then press (Sound mode 1 - internal TV speakers).

- Connect an AF voltmeter to 10P57, pin 3.
- If the level in the *treble* has to be adjusted, connect a 10kHz signal, and adjust the level at the input 10P57-3 to 250mV by means of the audio oscillator output and volume on Beo4.
- If the level in the bass has to be adjusted, connect a 1kHz signal, and adjust the level at the input 10P57-3 to 250mV by means of the audio oscillator output and volume or some on Beo4.
- Connect an AF voltmeter across the output of the unit in question (the speaker units need not be connected during the adjustment procedure):

Bass:

10P60-1

Bass out

10P60-2 10P60-3 N.C. Bass ground

Treble:

Treble out

10P60-4 10P60-5

Treble ground

 Adjust until the voltage at the speaker output corresponds to the voltage found in the speaker level table by means of the rated value stamped on the back of the speaker unit.

Bass adjustment: 10R59 (coordinate 1E)
Treble adjustment: 10R58 (coordinate 1D)

| Rated value in dB | Bass | Treble |
|-------------------|--------|--------|
| +2.00 dB | 1.41 V | 2.04 V |
| +1.75 dB | 1.46 V | 2.10 V |
| +1.50 dB | 1.50 V | 2.16 V |
| +1.25 dB | 1.54 V | 2.23 V |
| +1.00 dB | 1.59 V | 2.29 V |
| +0.75 dB | 1.63 V | 2.36 V |
| +0.50 dB | 1.68 V | 2.43 V |
| +0.25 dB | 1.73 V | 2.50 V |
| 0.00 dB | 1.78 V | 2.57 V |
| - 0.25 dB | 1.83 V | 2.65 V |
| - 0.50 dB | 1.88 V | 2.72 V |
| - 0.75 dB | 1.94 V | 2.80 V |
| - 1.00 dB | 2.00 V | 2.88 V |
| - 1.25 dB | 2.06 V | 2.97 V |
| - 1.50 dB | 2.12 V | 3.05 V |
| - 1.75 dB | 2.18 V | 3.14 V |
| - 2.00 dB | 2.24 V | 3.24 V |

Replacement of module 10, **Output Amplifier**

When replacing module 10, Output Amplifier, the outputs (bass and treble) shall be adjusted to the nominal value (0.00dB) according to the adjustment procedure for Adjustment of Bass/Treble Speaker Sound Level. Module 10, Output Amplifier, is the same module in the right and left channels.

Module 12 IF

To be adjusted only when replacing module 12 IF, or 12IC4, TDA9815 (coordinate 2A).

Test plug 1P89:

Pin 1 ground

Pin 2 5V

AF left (CH SEP) Pin 3

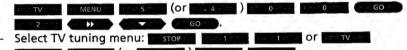
Pin 4

V_{AFC} AF right Pin 5

V_{AGC} Takeover Pin 6

 Connect an aerial signal with a known frequency (XXX.25MHz) that contains A2 stereo sound modulation.

Select AFC to be off in the TV service setup menu, press:



MENU 2: 127-5 ... (Or ----4 Set the tuner to the known frequency, and press:

(digit entry) , and select a programme number

AFC

- Connect a DC voltmeter to 1P89 pin 4 (V_{AFC}).
- Adjust 12L5 (coordinate 2B) with a nonmagnetic trimming key until there is a voltage of 1.95V $\pm 0.1V$ at 1P89-4 (V_{AFC}).

AGC Takeover

- Adjust the aerial signal level to 2mV.
- Connect a DC voltmeter to 1P89, pin 6 (V_{AGC} Takeover).
- Adjust 12R112 (coordinate 2B) until there is a voltage of 7.3V ± 0.1 V at 1P89-6 (V_{AGC}Takeover).

Channel separation

- Connect an oscilloscope to 1P89, pin 3.
- Adjust 12R113 (coordinate 2B) until the minimum crosstalk has been obtained.

REPAIR TIPS Service mode

Service menu

The service mode consists of two parts: Service menu and bus ignore mode.

The service menu contains options such as picture and geometry adjustments - see the section SERVICE ADJUSTMENTS WITH Beo4. In the following description the Beo4 terminal is used for operating the product. SERVICE MODE, thereby gaining access to the Service menu:

Press MENU, and select the Setup line by means of the key, and then press Go Down Go Down Go Down Lit is possible to "go backwards" in the menus by pressing Stop Service mode is abandoned by pressing Go Down Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "go backwards" in the menus by pressing Go Down Lit is possible to "g

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape

In the service menu you can choose which source you wish to have information on or wish to adjust/set up.

Select Monitor, press

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

In the Monitor service menu you can choose among the following items of information:

(Picture and Geometry adjustments are described in the section on adjustments).

Monitor information menu, press

| Monitor inform | ation | |
|-----------------|-------|--------------|
| 06 IC1 AP | :SW | 3.0 |
| 14 IC707 FEP | :SW | 1.6 |
| Item no. | | 1200001 |
| Serial no. | | 12345678 |
| Last TV error | | 0126 88 - 2B |
| | | 0120 8A - 2B |
| | | 1222 MRF |
| | | **** |
| | | |
| Last ML/SL erro | r | NO |

- Software version number
- Item and serial numbers
- Last TV error
- Last ML/SL error

Last error

IIC bus error

The TV set is able to detect certain types of error and display them on the screen

The five latest TV errors are shown as error codes and displayed with the month/date (four digits) as provided by the current time of the system clock at the time of the error. The most recent error is displayed at the top. If there is an error on the hardware clock (14IC708 MK41T56) the month/date will be replaced by four question marks.

If there are no errors, full stops will replace the text.

The following TV error types can be displayed:

... No error registered

DF Data failure

OL Overload

MDL Megatext deadlock

MRF Megatext reset failure

XX-YZ (XX = IIC address

Y = IIC bus address, bus 1 or bus 2

Z = any IIC bus segment A/B/C/D)

The other error code is for detection of errors in the Master Link system. The following error types can be displayed:

Last ML/SL error NO = no error registered.

Last ML/SL error CI = address configuration impossible.

Last ML/SL error TD = ML data pulled down. Last ML/SL error TU = ML data pulled up.

Last ML/SL error -- = other undefinable error possibilities.

After repair of an error that has triggered the display of an error code, the error code has to be deleted. This is done by pressing in the Monitor information menu.

An IIC bus error means that the communication on the bus fails when the microcomputer tries to communicate with the address in question. In most cases this means that the addressed IC is defective but the defect could also be in one of the components surrounding the IC or in other components on the bus.

Addresses in connection with IIC bus errors:

Last error on bus 1

62-1 14IC707, 83C528 Data bus converter

D0-1 14IC708, MK41T6 Time clock

Last error on bus 2

4E - 2D

| 94 - 2D | 14IC501, TEA6425 Video switching |
|---------|---|
| 96 - 2D | 14IC502, TEA6425 Video switching |
| 90 - 2D | 14IC503, TEA6425 Video switching |
| 80 - 2D | 14IC250, TDA7314S Sound controls |
| 22 - 2A | 7IC1, SDA5273P Teletext processor |
| 88 - 2B | 2IC14, TDA4780 RGB Video processor |
| 4A - 2B | 2IC13, PCF8574 Port expander |
| 8A - 2B | 2IC7, TDA9162 Colour decoder & Sync processor |
| C0 - 2C | 1TU1, UV916 TV tuner |
| 84 - 2C | 1IC3, TDA8417 A2 stereo decoder |
| C6 - 2C | 20TU1, SXT2001CDI Satellit tuner |
| C4 - 2C | 20TU1, SXT2041CD Satellit tuner |
| B6 - 2C | 31IC7, CF70088 NICAM stereo decoder |
| 2E - 2B | 40IC5, SDA9188 P-in-P Processor |
| 88 - 2D | 30IC7, TDA7318D Sound controls |
| 4C - 2D | 30IC4, PCF8574 Port expander |

30IC3, PCF8574 Port expander

Data failure

If an error occurs in the EEPROM (6IC4) that prevents output of geometry and picture data to the TV set, the microcomputer will replace the missing data with default data that is stored in the PROM (6IC1).

Overload

If 2IC7 (TDA9162) is unable to start up in video mode after 20 attempts, the TV is switched off. This may happen as a result of an error condition in the deflection circuits.

Megatext deadlock

Errors on the data communication with teletext, 7IC1 (SDA5273P), when the TV set is switched on. The TV will go into stand-by.

Megatext reset failure

Errors on the data communication with teletext, 7IC1 (SDA5273P), when the TV set is started up from stand-by. The TV will remain in stand-by.

Last ML/SL error CI

Error during address configuration. No address has been allocated because an excessive number of units has been connected to the link.

 Disconnect all units from the link and reconnect them again, one at a time. Remember that this also applies to the 6-pole ribbon cable between the TV set and the VTR unit.

Last ML/SL error TD

The link is pulled down (Low). This error can occur in the form of a physical short circuit in the link, in the link drivers, or in the ML master/source circuit in the TV.

- Check whether there are pulses at 14IC13, pin 15 (ML M/S). The frequency should be approx. 1.5ms (the TV is the master).
- Disconnect the units from the link, one at a time, and check at the same time whether communication starts to be transmitted on the link.

 Remember that this also applies to the 6-pole ribbon cable between the TV set and the VTR unit.

Last ML/SL error TU

The link is pulled up (High). This error is caused either by the pull-up resistance in the system having become too low or by an error in the link drivers.

Disconnect the TV from the external link connection. Disconnect the 6-pole ribbon cable between the TV and the VTR unit, too. Switch on the TV, and check that a telegram of approx. 15ms, measured at 14IC13, pin 13 (ML TRANSMIT), is transmitted within 3-4 seconds. It should be possible to measure the same signal at 14IC13, pin 14 (ML RECEIVE), only it will be 10-15µs delayed.

Select Text Registers in the Monitor service menu, press

Test Register setup R01 R02 R03 R04 R05 R06 R07 R08 5 0 0 11 0 R09 R10 0 0

Group delay errors in certain cable aerial systems can disturb the reception of teletext. This is prevented by connecting a filter in series with the CVBS signal applied to the teletext decoder.

The numbers below the Register numbers R01 - R10 are programme numbers. If all the numbers are 0, no filter has been connected on any programme number.

If you wish to connect a filter on a programme number, select a register by pressing () / (), then press the desired programme number, and finally press ().

In the example above a filter has been connected on programmes 5 and 11. The filter is not engaged until the next time you switch to the programme in question.

WSS setting

Select the WSS setting in the Monitor service menu, press

WSS setting

WSS On

Some TV broadcasters transmit a picture format identification, enabling the TV to switch to the proper format automatically when WSS is On. When WSS is On, detection is carried out on all picture sources, i.e.

TV tuner, satellite tuner, video tuner, and video playback.

Under certain conditions, e.g. a poor signal-to-noise ratio, the detection may fail, which may entail faulty format switching. WSS may therefore be set to "Off".

WSS may also be set to "Broadcast only", which means that detection is carried out only on signals from the TV tuner and the satellite tuner.

Select Service counters in Monitor service menu, press

Monitor service counters

 Stand-by (days)
 0000

 Audio mode (days)
 0000

 Video mode (days)
 0000

 On/Off (times ★10)
 0000

On/Off (times \pm 10) shows how many times the TV has been switched off to stand-by mode. The number is given in full tens. If the number exceeds four digits, the four least significant digits are shown (e.g. 12834 is shown as 2834).

The other times in the menu are shown in full days.

Select TV-tuner in the Service menu, press 22

TV service setup AFC Tuner system On Low tuning range High tuning range 860 45 Upper band limit Lower band limit 450 170 Vhf-2 const Uhf const Vhf-1 const 148 49 162

In the TV service setup menu it is only the Tuner system and AFC fields that have to be used. The rest of the fields are for factory usage, and the values in them may not be changed.

Tuner system:

The digital value in the field stands for the CTV system for which the applicable IF is intended.

If the Tuner & IF PCB is replaced to permit reception of a different CTV system, the digital value has to be changed.

The digital values for the various systems are the following:

B/G = 1 L/L' = 2 M = 4 D/K = 8 I = 16

The digital value for system combinations is obtained by adding the applicable digits.

The digital values for the IF variants in BeoVision Avant are the following:

B/G = 1 B/G/L/L' = 3 I = 16 B/G/L/L'/I = 19 B/G/M/D/K/I = 29

Press Go or to save the digital value.

AFC On/Off is used in connection with adjustments but it may also be useful in other situations. Press () to move the cursor.

Press / to switch between On/Off.

AFC Off cannot be stored. AFC is always On after stand-by. Select V.Tape in the Service menu, press and select information in the V.Tape service menu, press and select information.

In the V.Tape information menu you can see the software versions in the VTR, for example.

The V.Tape service mode is described in the service manual for the BeoVision Avant VTR.

Bus ignore mode

If an error occurs in the IIC bus system which makes the TV go into stand-by every time it is attempted to be switched on, it is possible to switch on the TV in such a way that the error is ignored:

- The TV must be on stand-by for at least 5 seconds.
- Short-circuit the service socket, P84 on AV Switch PCB14, coordinate 4L, for a minimum of 0.5 second.
- Remove the jumper.

Options

The TV can be programmed for five different options.

Option 0 = No IR reception

Option 1 = Two IR-eyes in the same main room

Option 2 = One IR-eve in the main room

Option 5 = Two IR-eyes in the same link room

Option 6 = One IR-eye in the link room

Programming example using a Beo4 remote control terminal:

- The TV must be in stand-by mode.
- Press one, hold it down and press ust —, press on and then ust until the Beo4 display reads V.OPT. Now enter the number of the desired option.

The TV is programmed for option 1 from the factory.

Sound output PCB10 & ABL PCB11

When servicing the sound output, PCB10 and ABL PCB11, the work may be facilitated by removing the cooling plate, because it covers a number of the components. The STK output IC can easily stand operating at low drive without a cooling plate for short periods of time.

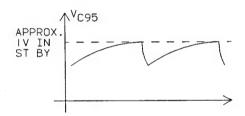
SMPS on PCB4

If there is an error in the main SMPS power-supply unit on PCB4, the following tips may be helpful during the repair.

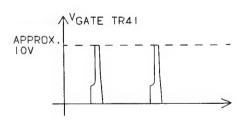
If TR41 is defective (which is checked most quickly with an ohmmeter), TR84, TR85 and TR86 should also be replaced.

If TR41 is not defective, the following should be checked:

- 1. The voltage at C4 must exceed approx. 250V. If it does not, the fuse or D1 may be defective.
- The power supply at C83 should be approx. 6V during start-up. If it is less, the power-supply unit will not start up. This may be due to a defective component drawing too much current from the powersupply unit.
- 3. If TR61 is short circuited, the power-supply unit will be unable to start up. The voltage at C83 will be approx. 6V.
- 4. If the voltage at C95 is not a DC voltage but looks as illustrated below, the overload protection circuit, TR91 etc., will be active. Maybe an electrolyte or a diode on one of the supply voltages is short circuited, or the power-supply unit may be subject to an excessive load. The same error will occur if L91 is disconnected.



5. Disconnect drain at TR41 (disconnect J5). Connect an external DC supply of 15-20V to C83, and connect the TV to the mains voltage. The oscillator should now be running at 20 kHz. The voltage at C95 should be approx. 1.3V DC, and not as illustrated above. A square-wave voltage should now be present at the collector of TR83. The square-wave voltage is amplified in TR84 and applied to the gate of TR41.



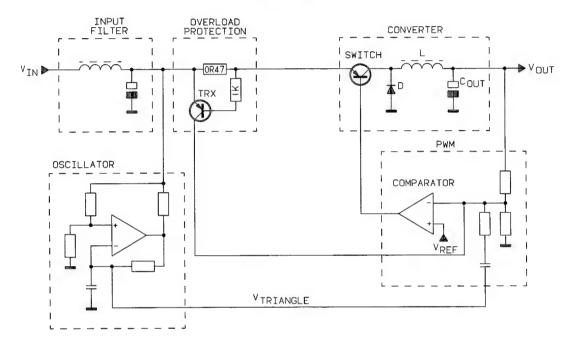
If the TV will not start up in audio mode from ST BY, check that pin 2 on P42 goes high.

50 kHz SMPS

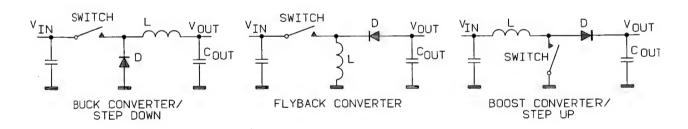
The BeoVision Avant contains three small SMPS power-supply units. They are placed on AV switch PCB14, Satellite PCB20 and Dolby Surround PCB30 respectively.

The three SMPS's are designed according to three different principles, yet they have the following features in common:

- Oscillator.
- Feedback/pulse-width modulator (PWM).
- Input filter.
- Overload protection circuit.
- Converter (switch).



The three principles are illustrated below:

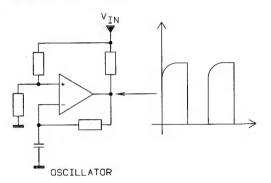


Error tips for the converter

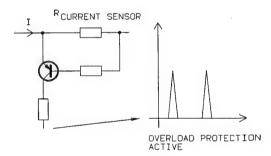
- Defective switch → No Vout, or Vout = Vin
- Defective diode → No Vout, or Vout = Vin

General troubleshooting tips

- Check the voltage at the collector of the switch transistor. It should be a square-wave voltage, perhaps with some ringings. The frequency of the pulses is approx. 50 kHz. If a DC voltage is present, the SMPS does not operate. The oscillator, switch transistor or converter diode may be defective.
- Check that the oscillator is operating at approx. 50 kHz. If not, there may be an error in the oscillator, or the overload protection circuit may be active. The oscillator in all of the small SMPS's are designed in the same way, over a comparator.



3. Check whether the overload protection circuit is active. If it is active, that may be due to an excessive load, or a defective component in the SMPS. Disconnect the load to check where the error is. The overload protection circuit generates a pulse when the current in the switch transistor becomes too great. When this happens, the switch transistor is disconnected, and it is not switched back on again until a period of approx. 20µs has elapsed.



SERVICE-EINSTELLUNGEN MIT Beo4

Siehe den Abschnitt 'Brief Operation Guide' für allgemeine Informationen über die Bedienung.

Reset

Helligkeit (Brilliance), Farbsättigung (Colour) und Kontrast (Contrast) auf ihre Nominalwerte einstellen, so daß diese Werte mit der Taste *RESET* wieder aufrufbar sind (vielleicht ADD-Funktion).

- Tastenbetätigung: -- TV -- -- MENU -- 5 -- (oder -- 4 --) -- 3 --

Brilliance Colour Contrast 32 32 44

- Mit den Taste stop rückwärtsschalten. Werte evtl. mit der Taste speichern.

Format

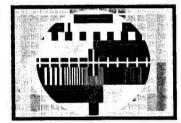
BeoVision Avant bietet die Möglichkeit, unter 6 verschiedenen Bildformaten mit Hilfe der Beo4-Fernbedienung zu wählen.

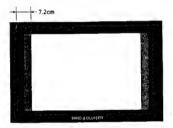
'Picture adjustments', d.h. Bildeinstellungen, sind nur in Format 1 durchzuführen. Die übrigen 5 Formate werden sich automatisch Format 1 anpassen.

'Geometry adjustments', d.h. Geometrieeinstellungen, sind in allen Formaten durchzuführen.

- Ein Standard-4:3-Testbild (z.B. Philips) anschließen:
- Grücken und solange auf Grücken, bis im Display FORMAT erscheint.
- zeigt ein Bang & Olufsen-optimiertes 14:9-Breitwandbild bei Anschluß eines Standard-4:3-Signals:

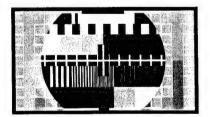
FORMAT 1





zeigt ein volles 16:9-Breitwandbild bei Anschluß eines Standard-4:3-Signals mit schwarzem Streifen (Balken) am oberen und unteren Bildrand:

FORMAT 2



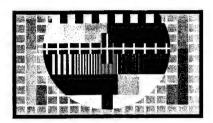
zeigt ein volles 16:9-Breitwandbild bei Anschluß eines Standard-4:3-Signals mit schwarzem Streifen (Balken) am unteren Bildrand:

FORMAT 3



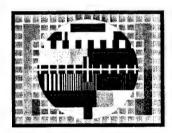
zeigt ein volles 16:9-Breitwandbild bei Anschluß eines Standard-4:3-Signals mit einem schwarzen Streifen (Balken) am oberen Bildrand:

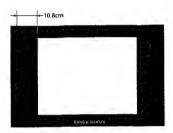
FORMAT 4



zeigt ein Standard-4:3-Bild bei Anschluß eines Standard-4:3-Signals:

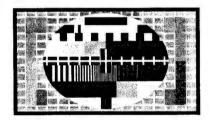
FORMAT 5



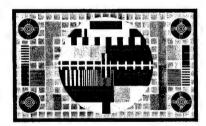


zeigt ein volles 16:9-Breitwandbild bei Anschluß eines Widescreen- oder Breitbild-16:9-Signals:

FORMAT 6 4:3



FORMAT 6 16:9



Service mode

Das TV-Gerät in SERVICE MODE bringen, wenn das gewünschte Format gewählt worden ist, um Zugang zum 'Service menu' zu bekommen:

Tastenbetätigung: TV WENU und anschließend die 'Setup'Zeile mit der Taste Wählen und dann GO GO drücken.

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape
- drücken, um Zugang zu den 'Monitor'-Einstellungen zu bekommen.

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

Bildeinstellungen

im 'Monitor service menu' drücken, um Zugang zu den Bildeinstellungen (Picture adjustments) zu bekommen:

Picture adjustments

- 1 Rdr XX
- 2 Gdr XX
- 3 Rcu XX
- 4 Gcu XX

Red drive 0 - 63 Green drive 0 - 63 Red cut-off balance 0 - 63 Green cut-off balance 0 - 63

- 'Picture adjustments', d.h. die Bildeinstellungen, sind nur in Format 1 durchzuführen.
- Ein Standard-4:3-Testbild (z.B. Philips) anschließen.
- Bildeinstellung mit den Ziffern (1 4) wählen und mit oder einstellen. Während des Einstellvorgangs ist es möglich, eine neue Bildeinstellung mit oder zu wählen. Die Einstellung mit speichern und evtl. eine neue Einstellung wählen, oder das Menü mit stop beenden. Zum Verlassen der Service-Menüs die Taste statt drücken.

Treiber (Drive)

- Helligkeit auf Nominalwert einstellen: Brilliance 32.
- Farbsättigung entfernen: 00.
- Roten und grünen Treiber ('Rdr' und 'Gdr') auf korrekten Weißton einstellen.

Sperrpunkt-Balance (Cut-off-balance)

- Helligkeit auf Nominalwert einstellen: Brilliance 32.
- Farbsättigung entfernen: 00.
- Rote und grüne 'Cut-off'-Balance ('Rcu' und 'Gcu') so lange abgleichen, bis die dunklen Felder im Testbild farblos sind.

Geometrieeinstellungen

- Geometrieeinstellungen (Geometry adjustments) zu bekommen:

Geometry adjustments

- 1 Hph XX
- 2 Ham XX
- 3 Vam XX
- 4 Vsc 8
- 5 Vsh 31
- 6 Vsl XX
- 7 EWc XX
- 8 EWp XX
- 9 EWt XX

- Horizontal phase 0 63 Horizontal amplitude 0 - 63 Vertical amplitude 0 - 63
- Vertical s-correction 0 63
 Vertical shift/centering 0 63
- Vertical slope 0 63
- East/West corner 0 63
- East/West parabola 0 63
- East/West trapeze 0 63
- 'Geometry adjustments', d.h. Geometrieeinstellungen, sind in allen Formaten durchzuführen.
- Ein Standard-Testbild (z.B. Philips) an das gewählte Format anschließen.
- Geometrieeinstellung mit den Ziffern (1 9) wählen und mit oder einstellen. Während des Einstellvorgangs ist es möglich, eine neue Geometrieeinstellung mit oder zu wählen. Die Einstellung mit speichern und evtl. eine neue Einstellung wählen, oder das Menü mit stope beenden. Zum Verlassen der Service-Menüs die Taste extrem drücken.

Horizontal-Zentrierung/Phase (Hph)

- Helligkeit (Brilliance) auf Maximalwert einstellen: Brilliance 62.
- Horizontal-Amplitude auf Minimalbreite einstellen: Ham 00.
- Erforderlichenfalls das Bild bestmöglich mit 5S130 (Koordinate 7E) im Bildformat 6 zentrieren (siehe hierzu den Punkt 'Format').
- Die Bildzentrierung mit Horizontal-Phase (Hph) nachstellen.
- Horizontal-Amplitude (Ham) auf korrekte Breite einstellen (siehe hierzu den Punkt 'Format').
- Evtl. Horizontal-Phase (Hph) nachstellen.

Horizontal-Amplitude (Ham)

 Horizontal-Amplitude (Ham) auf die korrekte Breite einstellen (siehe hierzu den Punkt 'Horizontal-Zentrierung/Phase' (Hph)). Es gibt einen schwarzen Streifen (Balken) auf beiden Seiten des sichtbaren Bildes in den Bildschirm-Formaten:

Format 1 (14:9) = 7.2 cm/2.84" auf jeder Seite. Format 5 (4:3) = 14.4 cm/5.68" auf jeder Seite.

Vertikal-Amplitude (Vam)

- Vertikal-Amplitude (Vam) so einstellen, daß das Bild oben paßt (sehe hierzu den Punkt 'Format').

Vertikal-S-Korrektur (Vsc)

- Vertikal-S-Korrektur auf 8 (Vsc 08) einstellen.

Vertikal-Zentrierung (Vsh)

- Vertikal-Zentrierung auf 31 (Vsh 31) einstellen.

Vertikal-Slope (Vsl)

 Vertikal-Slope/Rampe (Vsl) so einstellen, daß das Bild unten paßt(si ehe hierzu den Punkt 'Format'). Die Vertikal-Amplitude (Vam) wird hierd urch beeinflußt.

Ost-West-Ecken (E/Wc)

- Ost-West-Ecken (E/Wc) auf korrekte Eckengeometrie einstellen.

Ost-West-Parabel (E/Wp)

- Ost-West-Parabel (E/Wp) auf korrekte Seitengeometrie einstellen

Ost-West-Trapez (E/Wt)

Ost-West-Trapez (E/Wt) auf korrekte Seitengeometrie einstellen.

EINSTELLUNGSANWEISUNGEN

Bei den folgenden Einstellungen ist das Gerät - falls nichts Gegenteiliges angeführt ist - an ein Farbtestbild anzuschließen.

Es müssen die erforderlichen Service-Einstellungen mit Hilfe des Fernbedienungsterminals bereits vorgenommen worden sein.

Modul 2 'Video/Chroma & Teletext' 4,43-MHz-Farbträgerfalle (Saugkreis)

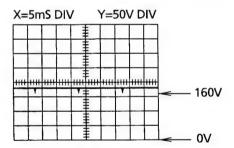
- Ein PAL-Farbbalken-Testbild anschließen.
- Ein Oszilloskop an Anschluß 17 des 2IC2 TDA4565 (Koordinate 1C) anschließen. Masse an Anschluß 18 des 2IC2.
- Mit 2L1 (Koordinate 3C) auf minimalen 4,43-MHz-Reste im Signal abgleichen. Diese Einstellung hat mit einem nicht-magnetischen Justierwerkzeug zu erfolgen.

Modul 5 'Deflection & EHT' Fokussierung

- Helligkeit und Farbsättigung auf Nominalwerte (32/32) einstellen.
- Kontrast auf Maximalwert (62) einstellen.
- Auf bestmögliche Fokussierung (Bildschärfe) ca. 10 cm/4" vom Bildschirmrand gesehen - mit Hilfe des Fokussierpotentiometer 5R121 (FOCUS) abgleichen.

G2 (Cut-off)

- Helligkeit auf Nominalwert (32) einstellen.
- Den AV-Stecker von der V.TAPE-fassung abmontieren. Ebenfalls das 6polige Flachbandkabel vom TV-Gerät (14P19 Koordinate 1C) zur VTR-Einheit abmontieren.
- Mit Hilfe eines Oszilloskops den Meßpunkt der Widerstände 3R1, 3R2 oder 3R3 (Oszilloskop Bild) ermitteln, der die höchste Meßpulsspannung ergibt.
- Mit dem G2-(SCREEN)-Potentiometer 5R121 so lange abgleichen, bis die Meßpulsspannung bei 160 VDC liegt (absoluter Maximalpegel).



Alternatives G2-Einstellverfahren

Zum Erzielen einer genauen Einstellung sollte für die Einstellung unbedingt ein Oszilloskop benutzt werden.

- Helligkeit und Kontrast auf Nominalwerte (32) einstellen.
- Den AV-Stecker von der V.TAPE-fassung abmontieren. Ebenfalls das 6polige Flachbandkabel vom TV-Gerät (14P19 Koordinate 1C) zur VTR-Einheit abmontieren.
- 58PE1 (Foto-Transistor) auf der Platine 'PCB 58 Display & IR' zudecken.
- Mit einem Voltmeter (Ri > 1Mohm) den Spannungsabfall über 3R1, 3R2 und 3R3 messen.
- Mit Hilfe des G2-Potentiometers 5R121 so lange abgleichen, bis eine Spannung von 2 V über denjenigen der Widerstände 3R1, 3R2 oder 3R3 gemessen wird, der den geringsten Spannungsabfall aufweist.

Module 30 'Dolby Processing' Verstärkung

Eine Einstellung soll nur im Zusammenhang mit einem Austausch der Komponenten 30IC8, 30C1, 30C18, 30C19, 30C12, 30C13, 30C134 erfolgen.

- Den SMD-Widerstand 30R23 (Koordinate 2B) entfernen/anheben.
- Einen Tongenerator an die Lötstelle des 30R23, die zum Anschluß 53 des 30IC8 führt, über einen 10μF-Elektrolytkondensator mit + gegen die Lötstelle zeigend (siehe hierzu Bild Seite 5-1) anschließen. Masse an 'Power Link', Anschluß 2.
- Den Tongenerator zur Abgabe von 5 kHz, ca. 200 mV RMS einstellen.
- Ein AC-Voltmeter an die Lötstelle des 30R23, die zum Anschluß 53 des 30IC8 führt (AF Surround Input) anschließen, den Pegel messen und notieren.
- Das AC-Voltmeter an 30R10 (AF Surround Output) anschließen und mit 30C134 so lange abgleichen, bis der gleiche Pegel am 30R10 (Output) gemessen wird, wie am 30R23 (Input) gemessen wurde.
- Die Messung der Verstärkung mit einer Genauigkeit von ±3dB bei den Frequenzen 3 kHz und 1 kHz wiederholen bzw. überprüfen.
- Den Widerstand 30R23 erneut montieren.

Modul 40 'Picture in Picture' 'Cloche'-Filter

- Ein SECAM-Testbild (Vertikal-Farbbalken) anschließen.
- Mit 40L1 so lange abgleichen, bis optimale Farbübergange im Farbbalken erzielt werden.
- Abschließend ein SECAM-Testbild (Horizontal-Farbbalken) zwecks Kontrolle anschließen und mit Hilfe eines Oszilloskops überprüfen, ob alle Farbbalken den gleichen Pegel aufweisen.

Modul 10 'Output Amplifier' Einstellen des Tiefen/Höhen-Lautsprecherpegels

Diese Einstellung soll nur nach Austausch der Komponenten 10IC1, 10R58, 10R59 oder einer der Lautsprechereinheiten durchgeführt werden. Modul 10 'Output Amplifier' ist gleich für den rechten und den linken Kanal.

Die neue Lautsprechereinheit besitzt auf der Rückseite einen aufgedruckten Meßwert; dieser Wert ist bei der Einstellung zu benutzen.

 Den AV-Stecker von der V.TAPE-Buchse entfernen und einen Tongenerator anschließen:

AV-Stecker:

14P21 Anschluß 2

Audio R (rechts) ein

14P21 Anschluß 4

Audio Masse Audio L (links) ein

- WTAPE S drücken und solange auf Grücken, bis im Display SPEAKER erscheint, danach Grücken (Sound mode 1 - Gerätelautsprecher).

 Die Klangeinstellungen des TV-Gerätes 'Bass', 'Treble', 'Balance' müssen ungeregelt sein (0), und 'Loundness' muß abgeschaltet sein (Off).

Tastenbetätigung: MENU 5 (oder 4) 2 und mit () oder () einstellen.

- Ein AC-Voltmeter an Anschluß 3 des 10P57 anschließen.
- Falls der Höhenpegel einzustellen ist, ist ein Signal von 10 kHz anzuschließen, und der Pegel am Eingang 10P57-3 wird mit Hilfe des Tongenerator-Ausgangspegels und mit den Lautstärketasten oder auf Beo4 auf 250 mV eingestellt.
- Falls der *Tiefenpegel* einzustellen ist, ist ein Signal von 1 kHz anzuschließen, und der Pegel am Eingang 10P57-3 wird mit Hilfe des Tongenerator-Ausgangspegels und mit den Lautstärketasten oder auf Beo4 auf 250 mV eingestellt.
- Ein AC-Voltmeter über den Ausgang der aktuellen Einheit anschließen (die Lautsprechereinheiten brauchen während des Einstellvorgangs nicht angeschlossen zu sein):

Tiefen (Bass):

10P60-1

Bass out

10P60-2 10P60-3

N.C.

Höhen (Treble): 10P60-4

Bass ground Treble out

10P60-4

Treble ground

 Jetzt so lange abgleichen, bis die Spannung am Lautsprecherausgang mit der Spannung in der nachstehenden Lautsprecherpegel-Tabelle mit Hilfe des auf der Rückseite der Lautsprechereinheit aufgedruckten Wertes übereinstimmt.

Tiefen-Einstellung: 10R59 (Koordinate 1E) Höhen-Einstellung: 10R58 (Koordinate 1D)

| Aufgedruckter dB-Wert | Tiefen (Bass) | Höhen (Treble) |
|-----------------------|---------------|----------------|
| +2,00 dB | 1,41 V | 2,04 V |
| +1,75 dB | 1,46 V | 2,10 V |
| +1,50 dB | 1,50 V | 2,16 V |
| +1,25 dB | 1,54 V | 2,23 V |
| +1,00 dB | 1,59 V | 2,29 V |
| +0,75 dB | 1,63 V | 2,36 V |
| +0,50 dB | 1,68 V | 2,43 V |
| +0,25 dB | 1,73 V | 2,50 V |
| 0,00 dB | 1,78 V | 2,57 V |
| - 0,25 dB | 1,83 V | 2,65 V |
| - 0,50 dB | 1,88 V | 2,72 V |
| - 0,75 dB | 1,94 V | 2,80 V |
| - 1,00 dB | 2,00 V | 2,88 V |
| - 1,25 dB | 2,06 V | 2,97 V |
| - 1,50 dB | 2,12 V | 3,05 V |
| - 1,75 dB | 2,18 V | 3,14 V |
| - 2,00 dB | 2,24 V | 3,24 V |

Austausch von Modul 10 'Output Amplifier'

Nach Austausch des Moduls 10 'Output Amplifier' sind die Ausgänge (Tiefen und Höhen) auf den Nominalwert (0,00 dB) entsprechend des Einstellvorgangs für das 'Einstellen des Tiefen/Höhen-Lautsprecherpegels' abzugleichen. Modul 10 'Output Amplifier' ist gleich für den rechten und den linken Kanal.

Modul 12 'IF'

Eine Einstellung soll nur nach Austausch von Modul 12 'IF' oder 12IC4 TDA9815 (Koordinate 2A) durchgeführt werden.

Test-Stecker 1P89:

Anschluß 1 Masse (Ground)

Anschluß 2 5 V

Anschluß 3 'LF' links (CH SEP)

Anschluß 4

V_{AFC} 'LF' rechts Anschluß 5 Anschluß 6 V_{AGC} Takeover

- Ein Antennensignal von bekannter Frequenz (XXX.25 MHz), das A2-Stereoton-Modulation enthält, anschließen.
- Im 'TV service setup'-Menü AFC 'Off' wählen; Tastenbetätigung:



Den Tuner auf die bekannte Frequenz einstellen; Tastenbetätigung: (Zifferneingabe) , und eine Programmnummer mit wax and was a come wählen.

Automatische Verstärkungsregelung (AFC)

- Ein DC-Voltmeter an Anschluß 4 (V_{AFC}) des 1P89 anschließen.
- Mit 12L5 (Koordinate 2B) mittels eines nicht-magnetischen Trimmschlüssels so lange abgleichen, bis die Spannung am 1P89-4 (V_{AFC}) = 1,95 V ± 0,1 V.

'AGC Takeover'

- Den Antennensignalpegel auf 2 mV einstellen.
- Ein DC-Voltmeter an Anschluß 6 (V_{AGC} Takeover) des 1P89 anschließen.
- Mit 12R112 (Koordinate 2B) so lange abgleichen, bis die Spannungam 1P89-6 (V_{AGC} Takeover) = 7,3 V ± 0,1 V.

Kanaltrennung (CH SEP)

- Ein Oszilloskop an Anschluß 3 des 1P89 anschließen.
- Mit 12R113 (Koordinate 2B) auf minimales Übersprechen einsteller.

REPARATURTIPS Service-Modus

'Service menu'

Der Service-Modus setzt sich aus 2 Bereichen zusammen: 'Service menu' und 'Bus ignore mode'.

Im Service-Menü besteht u.a. die Möglichkeit für Bild- und Geometrieeinstellungen; siehe hierzu den Abschnitt 'Service-Einstellungen mit Beo4'. In der folgenden Beschreibung wird das Beo4-Terminal für die Bedienung benutzt. Zugang zum Service-Menü:

- Tastenbetätigung: TV MENUE und anschließend die 'Setup'Zeile mit der Taste Wählen und dann GO Wählen und anschließend die 'Setup'Zeile mit der Taste Wählen und anschließend die 'Setup'Wählen und anschließend die 'Setup'Zeile mit der Taste Wählen und dann GO Wählen und

Zum Verlassen des Service-Modus die Taste des Oder der der drücken.

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape

Im Service-Menü kann die Quelle gewählt werden, über die Informationen benötigt werden, oder die nachzustellen/aufzustellen ist.

'Monitor' wählen: Tastenbetätigung

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

Im Monitor-Service-Menü kann zwischen den nachstehenden Informationen gewählt werden:

(Die Bild- und Geometrie-Einstellungen sind im Abschnitt über die Einstellungen beschrieben).

'Monitor information menu': Tastenbetätigung

Monitor information AP: SW 3.0 06 IC1 14 IC707 FEP: SW 1.6 1200001 Item no. Serial no. 12345678 Last TV error 0126 88 - 2B 0120 8A - 2B 1222 MRF Last ML/SL error NO

- Software-Version-Nummer
- Bestell- und Serien-Nummer
- Letzter TV-Fehler
- Letzter ML/SL-Fehler

'Last Error'

Das TV-Gerät kann gewisse Fehlertypen erkennen und diese auf dem Bildschirm anzeigen.

Die letzten 5 TV-Fehler werden als Fehlercodes ausgegeben und durch Monat/Tag (vierstellig) von der aktuellen Systemuhrzeit des Fehlerzeitpunktes angezeigt. Der zuletzt aufgetretene Fehler wird oben geschrieben. Bei Fehlern der Hardware-Zeituhr (14IC708 MK41T56) werden an Stelle von Monat/Tag vier Fragezeichen geschrieben. Wenn es keine Fehler gibt, werden an Stelle von Text Punkte geschrieben.

Die folgenden TV-Fehlertypen können angezeigt werden:

..... Keine Fehler registriert
DF Data failure (Datenfehler)
OL Overload (Überlastung)

MDL Megatext deadlock (Megatext Blockierung)
MRF Megatext reset failure (Megatext Reset-Fehler)

XX-YZ (XX = IIC Adresse

Y = IIC-Bus-Adresse, Bus 1 oder 2 Z = evtl. IIC-Bus-Segment A/B/C/D)

Der zweite Fehlercode bezieht sich auf Fehler im Master Link-System.

Es können die folgenden Fehlertypen dargestellt werden:

Last ML/SL error
TD = 'ML Data' auf 'Low' gezogen.
TU = 'ML Data' auf 'High' gezogen.

Last ML/SL error — = Andere nicht-definierbare Fehlermöglichkeiten.

Nach Reparatur eines Fehlers, bei dem ein Fehlercode im Display angezeigt gewesen ist, ist der Fehlercode zu löschen. Dies erfolgt durch Drücken der Taste im 'Monitor information'-Menü.

Ein IIC-Busfehler bewirkt, daß die Kommunikation auf dem Bus ausfällt, wenn der Mikrocomputer versucht, mit der betreffenden Adresse zu kommunizieren. In den meisten Fällen bedeutet dies, daß der adressierte IC fehlerhaft ist, es können aber auch eine benachbarte Komponente des IC oder andere Komponenten auf dem Bus fehlerhaft sein.

Adressen bei IIC-Busfehlern:

'Last error' auf Bus 1

62-1 14IC707, 83C528 Datenbus-Konverter D0-1 14IC708, MK41T6 Hardware-Zeituhr

'Last error' auf Bus 2

94 - 2D 14IC501, TEA6425 Video-Schalten

96 - 2D 14IC502, TEA6425 Video-Schalten 90 - 2D 14IC503, TEA6425 Video-Schalten

80 - 2D 14IC250, TDA7314S Klangregler

22 - 2A 7IC1, SDA5273P Videotext-Prozessor 88 - 2B 2IC14, TDA4780 RGB Video-Prozessor

4A - 2B 2IC13, PCF8574 Port-Expander

8A - 2B 2IC7, TDA9162 Farbdecoder & Synchron-Prozessor

C0 - 2C 1TU1, UV916 TV Tuner

84 - 2C 1IC3, TDA8417 A2-Stereodecoder

C6 - 2C 20TU1, SXT2001CDI Satelliten-Tuner

C4 - 2C 20TU1, SXT2041CD Satelliten-Tuner

B6 - 2C 31IC7, CF70088 NICAM-Stereodecoder

2E - 2B 40IC5, SDA9188 Bild-in-Bild-Prozessor

88 - 2D 30IC7, TDA7318D Klangregler

4C - 2D 30IC4, PCF8574 Port-Expander

4E - 2D 30IC3, PCF8574 Port-Expander

IIC-Busfehler

Datenfehler (Data failure)

Falls im EEPROM (6IC4) ein Fehler entsteht, so daß es nicht möglich ist, Geometrie- und Bilddaten für das TV-Gerät auszulesen, wird der Mikrocomputer die fehlenden Daten durch 'Default'-Daten ersetzen, die im PROM (6IC1) gespeichert sind.

Überlastung (Overload)

Falls 2IC7 (TDA9162) im Video-Modus nach 20 Versuchen nicht anlaufen kann, wird das TV-Gerät abgeschaltet. Diese Situation kann auf etwaige Fehler in den Ablenkschaltkreisen zurückzuführen sein.

Megatext deadlock

Fehler in der Datenkommunikation mit Videotext (Teletext) 7IC1 (SDA5273P) bei eingeschaltetem TV-Gerät. Das TV-Gerät schaltet in 'Stand-by'.

Megatext reset failure

Fehler in der Datenkommunikation mit Videotext (Teletext) 7IC1 (SDA5273P), wenn das TV-Gerät aus 'Stand-by' eingeschaltet wird. Das TV-Gerät verbleibt in 'Stand-by'.

'Last ML/SL error CI'

Fehler bei der Adreßkonfiguration. Keine Adreßzuordnung, weil an das Link zu viele Einheiten angeschlossen worden sind.

 Alle Einheiten vom Link trennen und sie wieder eine nach der anderen anschließen. Dabei nicht vergessen, daß dies ebenfalls für das 6polige Flachkabel zwischen TV-Gerät und VTR-Einheit gilt.

'Last ML/SL error TD'

Das Link wurde auf 'Low' gezogen. Dieser Fehler kann infolge eines physischen Kurzschlusses im Link, in den Link-Treibern oder im ML 'Master/Source'-Schaltkreis des TV-Gerätes entstehen.

- Überprüfen, ob am Anschluß 15 des 14IC13 (ML M/S) Impulse vorhanden sind. Die Frequenz muß bei ca. 1,5 ms liegen (TV-Gerät Master).
- Die Einheiten jeweils eine nach der anderen vom Link trennen und gleichzeitig überprüfen, ob über das Link kommuniziert wird. Dabei nicht vergessen, daß dies ebenfalls für das 6polige Flachkabel zwischen TV-Gerät und VTR-Einheit gilt.

'Last ML/SL error TU'

Das Link wurde auf 'High' gezogen. Der Fehler ist entweder auf einen zu niedrig gewordenen 'Pull-up'-Widerstand des Systems oder auf eine Störung der Link-Treiber zurückzuführen.

- Das TV-Gerät von der externen Link-Verknüpfung trennen. Auch das 6polige Flachkabel zwischen TV-Gerät und VTR-Einheit unterbrechen. Dann das TV-Gerät einschalten und überprüfen, daß ein Telegramm von ca. 15 ms, gemessen am Anschluß 13 des 14IC13 (ML TRANSMIT), innerhalb von 3-4 Sekunden hinausgegeben wird. Es sollte möglich sein, dasselbe Signal am Anschluß 14 des 14IC13 (ML RECEIVE) zu messen - jedoch mit einer Verzögerung von 10-15 µs.

'Text Registers' im 'Monitor service menu' wählen: Tastenbetätigung

Test Register setup R01 R02 R03 R04 **R05** R06 **R07** R08 0 0 0 5 11 0 0 R09 R10 0 0

. . 5 .- . .

Gruppenlaufzeitfehler können in gewissen Kabelantennenanlagen den Empfang von Videotext (Teletext) stören. Diese können verhindert werden, falls in Reihe mit dem CVBS-Signal für den Videotext-Decoder ein Filter eingesetzt wird.

Bei den Ziffern unter den Register-Nummern R01 - R10 handelt es sich um Prögrammnummern. Sind alle Ziffern = 0, sind bei keiner der Programmnummern Filter eingesetzt worden.

Ist das Einsetzen eines Filters bei einer Programmnummer erwünscht, wird ein Register durch Drücken von der gewünschten Programmnummer. Zum Beenden ist die Taste zu drücken.

In dem gezeigten Beispiel wurden Filter bei Programm 5 und 11 eingesetzt. Das Filter wird erst beim nächstfolgenden Schalten zum betreffenden Programm eingeschaltet.

'WSS setting'

'WSS setting' aus dem 'Monitor Service'-Menü wählen: eingeben.

WSS setting

WSS

On

Gewisse Fernsehsender strahlen ein Bildformat-Identifikationssignal aus, so daß das TV-Gerät automatisch zum korrekten Format umschaltet, wenn WSS in Stellung 'On' steht. Bei 'WSS On' werden alle Bildquellen abgetastet, d.h. TV-Tuner, Satelliten-Tuner, Video-Tuner und Video-Wiedergabe. Unter gewissen Bedingungen, z.B. bei schlechtem Signal-Rausch-Verhältnis, kann die Signalerkennung versagen, was zur falschen Formatumschaltung führen kann. WSS kann deshalb in Stellung 'Off' geschaltet werden. WSS kann auch in Stellung 'Broadcast only' gesetzt werden, was bedeutet, daß ausschließlich Signale vom TV-Tuner und Satelliten-Tuner abgetastet werden.

'Service counters' im 'Monitor service menu' wählen: Tastenbetätigung

Monitor service counters

0000 Standby (days) 0000 Audio mode (days) Video mode (days) 0000 On/Off (times ★ 10) 0000

'On/Off (times ★ 10)' zeigt an, wie oft das TV-Gerät in 'Standby' geschaltet wurde. Die Zahl wird in ganzen 10'ern angegeben. Enthält die Zahl mehr als 4 Ziffern, so werden die 4 niederstwertigen Ziffern angegeben (z.B. 12834 wird als 2834 angegeben).

Die anderen im Menü dargestellten Zeiten werden in ganzen Tagen angegeben.

'TV-tuner' im 'Service menu' wählen: Tastenbetätigung

TV service setup Tuner system AFC On High tuning range Low tuning range 860 Upper band limit Lower band limit 450 Vhf-1 const Vhf-2 const Uhf const 162 148 49

Im 'TV service setup'-Menü sind nur die 'Tuner system'- und 'AFC'-Felder zu benutzen. Die übrigen Felder sind für werkseitige Zwecke bestimmt, und die darin enthaltenen Werte dürfen nicht geändert werden. 'Tuner system':

Der Zahlenwert in diesem Feld gibt an, für welches CTV-System der betreffende ZF-Teil vorgesehen ist.

Falls die 'Tuner & ZF'-Platine (PCB) zwecks Empfangs eines anderen CTV-Systems ausgetauscht wird, muß der Zahlenwert geändert werden. Die Zahlenwerte für die verschiedenen Systeme sind die folgenden:

B/G = 1 L/L' = 2 M = 4 D/K = 8 I = 16

Der Zahlenwert für Systemkombinationen erhält man durch Addieren der diesbezüglichen Werte.

Die Zahlenwerte für die ZF-Varianten im BeoVision Avant sind die folgenden:

B/G = 1 B/G/L/L' = 3 I = 16 B/G/L/L'/I = 19 B/G/M/D/K/I = 29

Der Zahlenwert wird mit der Taste @ GO gespeichert.

'AFC On/Off' ist für Einstellungen vorgesehen, kann aber auch in anderen Situationen nützlich sein. Zum Bewegen des Cursors die Tasten drücken. Zum Schalten zwischen 'On/Off' die Tasten drücken.

'AFC Off' kann nicht gespeichert werden. Nach 'Standby' befindet sich AFC immer in Stellung 'On'.

'V.Tape' im 'Service menu' wählen: Tastenbetätigung (danach 'Information' im 'V.Tape service menu' wählen: Tastenbetätigung (matter) im 'V.Tape information menu' kann man u.a. die Software-Version des VTR sehen.

Der 'V.Tape service'-Modus ist in der Serviceanleitung für BeoVision Avant VTI beschrieben.

'Bus ignore'-Modus

Falls ein Fehler im IIC-Bus-System entsteht, der bewirkt, daß das TV-Gerät bei jedem Einschaltversuch in 'Standby' schaltet, ist es möglich, das TV-Gerät so zu starten, daß der Fehler ignoriert wird:

- Das TV-Gerät muß für mindestens 5 Sekunden in 'Stand-by' sein.
- Die Service-Steckverbindung P84 am AV Switch PCB14, Koordinate 4L, für mindestens 0.5 Sekunden kurzschließen.
- Den Kurzschluß entfernen.
- drücken; das TV-Gerät wird jetzt in der Betriebsart 'Bus ignore mode' starten, wenn es möglich ist.

Optionen

Das TV-Gerät ist für vier verschiedene Optionen programmierbar.

Option 0 = Kein IR-Empfang

Option 1 = Zwei IR-Sensoren im selben Zentralraum

Option 2 = Ein IR-Sensor im Zentralraum

Option 5 = Zwei IR-Sensoren im selben Nebenraum

Option 6 = Ein IR-Sensor im Nebenraum

Programmierungsbeispiel mit Beo4:

- Das TV-Gerät muß in 'Standby' stehen.

- Die Taste gedrückt halten und drücken, danach drücken und sooft drücken, bis im Beo4-Display 'V.OPT' erscheint. Jetzt die Zahl für die gewünschte Option eingeben. Werkseitig ist das Gerät für Option 1 programmiert.

Sound Output PCB10 & ABL PCB11

Bei Wartungsarbeiten an den Platinen 'Sound Output PCB10' und 'ABL PCB11' kann es vorteilhaft sein, das Kühlblech abzumontieren, weil es einige der Komponenten abdeckt. Der STK-Ausgangs-IC kann gefahrlos ohne Kühlblech bei niedriger Aussteuerung für eine kürzere Zeit betrieben werden.

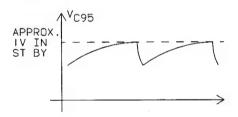
SMPS auf PCB4

Bei Fehlern im Haupt-'SMPS'-Netzteil auf PCB4 können die nachstehenden praktischen Hinweise bei Reparaturarbeiten von Nutzen sein.

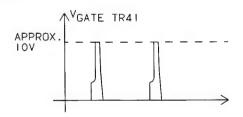
Falls TR41 fehlerhaft ist (was am schnellsten mit einem Ohm-Meter überprüft wird), sollten auch die Transistoren TR84, TR85 und TR86 ausgetauscht werden.

Falls TR41 nicht fehlerhaft ist, sollte folgendes überprüft werden:

- 1. Die Spannung am C4 muß über ca. 250 V liegen. Ist dies nicht der Fall, so kann die Sicherung oder D1 fehlerhaft sein.
- 2. Die Versorgung am C83 sollte während des Anlaufvorgangs bei ca. 6 V liegen. Wenn die Spannung niedriger ist, wird das Netzteil nicht anlaufen. Der Grund mag sein, daß eine fehlerhafte Komponente von der Versorgung zu viel Strom zieht.
- 3. Falls TR61 kurzgeschlossen ist, kann das Netzteil nicht anlaufen. Die Spannung am C83 muß bei ca. 6 V liegen.
- 4. Falls die Spannung am C95 keine DC-Spannung ist, sondern wie unten dargestellt aussieht, wird der Sicherungsschaltkreis TR91 u.a.m. in Tätigkeit sein. Die Ursache hierfür kann sein, daß ein Elektrolyt oder eine Diode an einer der Versorgungsspannungen kurzgeschlossen ist, oder daß die Belastung des Netzteils zu hoch ist. Bei unterbrochener L91 tritt der gleiche Fehler auf.



5. 'Drain' des TR41 unterbrechen (J5 anheben). Eine externe DC-Versorgung von 15-20 V an C83 anschließen und das TV-Gerät ans Netz anschließen. Der Oszillator muß jetzt bei 20 kHz arbeiten. Es müssen ca. 1,3 V DC am C95 anliegen, und nicht wie oben dargestellt. Es muß jetzt eine Rechteckspannung am Kollektor des TR83 stehen. Die Rechteckspannung wird in TR84 verstärkt und anschließend dem Gate des TR41 zugeführt.



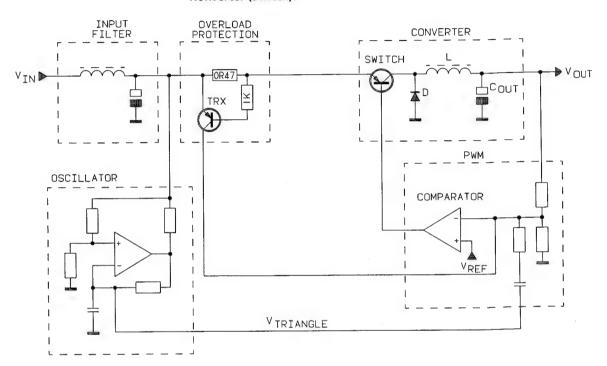
6. Falls das TV-Gerät nicht im Audio-Modus aus 'Standby' gestartet werden kann, ist zu überprüfen, daß Anschluß 2 des P42 auf 'High' schaltet.

50 kHz SMPS

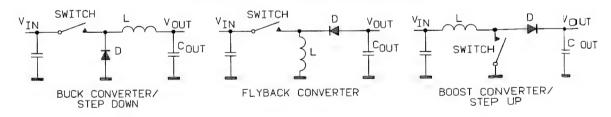
In BeoVision Avant sind drei kleine 'SMPS'-Netzteile vorgesehen. Sie befinden sich auf den Platinen 'AV Switch PCB14', 'Satellite PCB20' bzw. 'Dolby Surround PCB30'.

Der Aufbau der drei 'SMPS'-Netzteile basiert auf drei verschiedenen Prinzipien; sie weisen jedoch die folgenden gemeinsamen Grundzüge auf:

- Oszillator
- Feedback/Impulsbreiten-Modulator (PWM).
- Eingangsfilter.
- Sicherungsschaltkreis.
- Konverter (Switch).



Die drei Prinzipien sind nachstehend gezeigt:

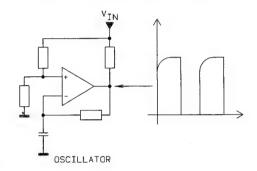


Fehlertips für den Konverter

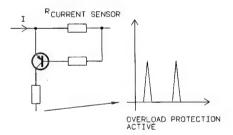
- Fehlerhafter Schalter → Keine Vout oder Vout = Vin.
- Fehlerhafte Diode → Keine Vout oder Vout = Vin.

Allgemeine Fehlersuchtips

- Die Spannung am Kollektor des Schalttransistors überprüfen. Hier muß eine Rechteckspannung anstehen, vielleicht mit einigen kleinen Schwingungen. Die Frequenz der Impulse liegt bei ca. 50 kHz. Falls hier eine DC-Spannung ansteht, arbeitet das 'SMPS'-Netzteil nicht. Der Oszillator, der Schalttransistor oder die Konverterdiode kann fehlerhaft sein.
- Überprüfen, daß der Oszillator mit ca. 50 kHz arbeitet; ist dies nicht der Fall, kann der Oszillator fehlerhaft sein, oder der Sicherungsschaltkreis ist in Tätigkeit. Der Oszillator in allen kleinen 'SMPS'-Netzteilen ist identisch aufgebaut, und zwar mit einem Komparator.



3. Überprüfen, ob der Sicherungsschaltkreis in Tätigkeit ist. Ist dies der Fall, so kann dies auf zu hohe Belastung oder auf eine fehlerhafte Komponente im 'SMPS' zurückzuführen sein. Die Belastung unterbrechen, um festzustellen, wo der Fehler liegt. Der Sicherungsschaltkreis liefert einen Impuls, wenn der Strom im Schalttransistor zu hoch wird. Wenn dies geschieht, sperrt der Schalttransistor, und erst nach Verlauf von ca. 20 µs schaltet er wieder.



REGLAGES DE MAINTENANCE AVEC LE Beo4

Se reporter au "guide abrégé d'utilisation" pour les généralités concernant la commande.

Reset (remise à l'état initial)

Régler la luminosité, la saturation des couleurs et le contraste sur leurs valeurs nominales afin de pouvoir les rappeler à l'aide de la touche *RESET* (utiliser éventuellement la fonction ADD):

- Taper TV - MENU - 5 - (OU - 4 -) - 3 - .

Brilliance 32 Contrast

44

Colour

32

- Régler avec , , ou ou , revenir en arrière avec stop . Le cas échéant, mémoriser les valeurs en appuyant sur

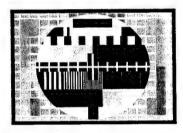
Format

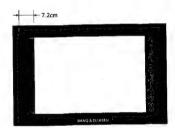
Associé à la télécommande Beo4, le BeoVision Avant permet de sélectionner 6 formats d'image.

Ne mettre en oeuvre l'option "Picture adjustments" que pour le format 1. Les 5 autres formats s'adaptent automatiquement en fonction de ce format. Mettre en oeuvre l'option "Geometry adjustments" pour l'ensemble des six formats.

- Raccorder une mire standard 4/3 (p. ex. Philips).
- Taper et appuyer sur sust o jusqu'à ce que l'afficheur indique FORMAT.
- montre une mire 14/9 Bang & Olufsen optimisée en présence d'un signal standard 4/3:

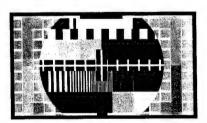
FORMAT 1





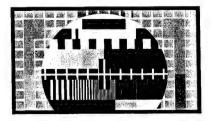
- montre une mire 16/9 plein écran en présence d'un signal standard 4/3 (avec barre noire en haut et en bas):

FORMAT 2



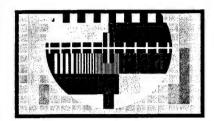
montre une mire 16/9 plein écran en présence d'un signal standard 4/3 (avec barre noire en bas de la mire) :

FORMAT 3



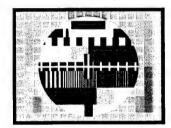
- montre une mire 16/9 plein écran en présence d'un signal standard 4/3 (avec dans une barre noire en haut de la mire) :

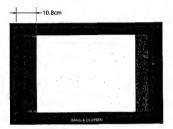
FORMAT 4



- montre une mire 4/3 standard en présence d'un signal standard 4/3 :

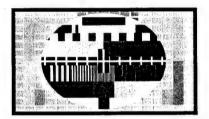
FORMAT 5



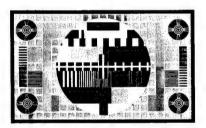


- montre une mire 16/9 plein écran en présence d'un signal 16/9 écran large :

FORMAT 6 4/3



FORMAT 6 16/9



Service mode (mode de maintenance)

Après avoir sélectionné le format souhaité, amener le téléviseur en MODE DE MAINTENANCE pour accéder au menu de maintenance :

- Taper TV TV MENU , sélectionner l'option «Setup» avec la touche et entrer (1000) (1000) (1000) (1000) (1000)

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape
- Taper pour accéder aux réglages concernant le moniteur.

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

Picture adjustments (réglages de l'image)

- Taper dans le menu de maintenance dédié au moniteur pour accéder aux réglages de l'image.

Picture adjustments

- 1 Rdr XX
- 2 Gdr XX
- 3 Rcu XX
- 4 Gcu XX

Red drive 0 - 63 Green drive 0 - 63 Red cut-off balance 0 - 63 Green cut-off balance 0 - 63

- Ne mettre en oeuvre l'option "Picture adjustments" que pour le format 1.
- Raccorder une mire standard 4/3 (p. ex. Philips).
- Sélectionner l'option souhaitée à l'aide des chiffres 1 à 4 et régler avec ou ou . Ce faisant, il est possible d'opter pour un autre réglage d'image en appuyant sur ou . Mémoriser le réglage effectué en appuyant sur sour , sélectionner un autre réglage ou sortir du menu en tapant store. Quitter les menus de maintenance en tapant seximes.

Drive (signaux chroma)

- Régler la luminosité sur sa valeur nominale : «Brilliance 32».
- Régler la saturation des couleurs sur 00.
- Régler les signaux chroma rouge (Rdr) et vert (Gdr) sur le blanc de référence adéquat.

Cut-off balance (balance de coupure)

- Régler la luminosité sur sa valeur nominale (32).
- Régler la saturation des couleurs sur 00.
- Régler la balance de coupure des signaux rouge (Rcu) et vert (Gcu) pour que les zones foncées de la mire soient incolores.

Geometry adjustments (réglages de la géométrie)

- Taper de dans le menu de maintenance dédié au moniteur pour accéder aux réglages de la géométrie.

Geometry adjustments

- 1 Hph XX
- 2 Ham XX
- 3 Vam XX
- 4 Vsc 8
- 5 Vsh 31
- 6 Vsl XX
- 7 FWc XX
- 8 EWp XX
- 9 EWt XX

Horizontal phase 0 - 63

Horizontal amplitude 0 - 63

Vertical amplitude 0 - 63

Vertical s-correction 0 - 63

Vertical shift/centring 0 - 63

Vertical slope 0 - 63

East/West corner 0 - 63

East/West parabola 0 - 63

East/West trapeze 0 - 63

- Mettre en oeuvre l'option "Geometry adjustments" pour l'ensemble des six formats.
- Raccorder une mire standard (p. ex. Philips) au format choisi.
- Sélectionner le réglage de géométrie souhaité à l'aide des chiffres 1 à 9 et régler avec M ou P. Ce faisant, il est possible d'opter pour un autre réglage de géométrie en appuyant sur L ou N. Mémoriser le réglage effectué en appuyant sur O, sélectionner un autre réglage ou sortir du menu en tapant T. Quitter les menus de maintenance en tapant S.

Centrage horizontal/phase (Hph)

- Régler la luminosité sur sa valeur max. : «Brilliance 62».
- Régler l'amplitude horizontale sur la largeur min. : Ham 00.
- Le cas échéant, centrer du mieux possible la mire du format 6 (voir paragraphe «Format») à l'aide de 5S130 (coordonnées 7E).
- Centrer la mire en corrigeant la phase horizontale (Hph) pour effectuer le réglage fin.
- Régler l'amplitude horizontale (Ham) sur la largeur adéquate (voir paragraphe «Format»).
- Corriger si nécessaire le réglage de la phase horizontale (Hph).

Amplitude horizontale (Ham)

Régler l'amplitude horizontale (Ham) sur la largeur adéquate (voir paragraphe «centrage horizontal/phase (Hph)»). Une barre noire borde les deux côtés de la mire visible sur les formats suivants : Format 1 (14/9) = 7,2 cm/2,84" de chaque côté.
 Format 5 (4/3) = 14,4 cm/5,68" de chaque côté.

Amplitude verticale (Vam)

- Régler l'amplitude verticale (Vam) pour que le haut de la mire soit conforme aux indications du paragraphe «Format».

Correction 5 verticale (Vsc)

Régler la correction 5 verticale sur 8 (Vsc 08).

Centrage vertical (Vsh)

Régler le centrage vertical sur 31 (Vsh 31).

Pente verticale (VsI)

- Régler la pente/rampe verticale (VsI) pour que le bas de la mire soit conforme aux indications du paragraphe «Format». Ce réglage agit sur l'amplitude verticale (Vam).

Coins est/ouest (E/Wc)

 Régler les coins est/ouest (E/Wc) pour obtenir une géométrie correcte dans les coins.

Parabole est/ouest (E/Wp)

 Régler la parabole est/ouest (E/Wp) pour obtenir une géométrie correcte sur les côtés.

Trapèze est/ouest (E/Wt)

 Régler la trapèze est/ouest (E/Wt) pour obtenir une géométrie correcte sur les côtes.

GUIDE DE REGLAGE

Sauf mention contraire, raccorder une mire de couleurs standard pour effectuer les réglages suivants.

Il convient d'avoir effectué préalablement les réglages de maintenance avec la télécommande.

Module 2 «Video/Chroma & Teletext» Filtre chroma 4,43 MHz

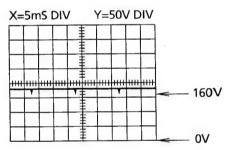
- Raccorder une mire de couleurs PAL.
- Raccorder un oscilloscope à la borne 17 de 2IC2 (TDA4565, coordonnées 1C). Mettre la borne 18 de 2IC2 à la masse.
- A l'aide d'un outil non magnétique, régler 2L1 (coordonnées 3C) pour obtenir une fréquence résiduelle minimale de 4,43 MHz dans le signal.

Module 5 «Deflection & EHT» Concentration

- Régler la luminosité et la saturation des couleurs sur leurs valeurs nominales (32 et 32).
- Régler le contraste sur sa valeur maximale (62).
- Se placer à 10 cm/4" du bord de l'écran et régler, à l'aide du potentiomètre 5R121 (FOCUS), pour obtenir une concentration optimale.

G2 (Cut-off)

- Régler la luminosité sur sa valeur nominale (32).
- Débrancher la fiche AV de la prise V.TAPE. Débrancher également le câble en nappe à 6 conducteurs reliant le téléviseur (14P19, coordonnées 1C) et le magnétoscope. Appuyer sur le VIAPEL.
- A l'aide d'un oscilloscope, définir le point de mesure de 3R1, 3R2 et 3R3 (oscillogramme) présentant la plus forte tension d'impulsion d'essai.
- Régler le potentiomètre 5R121 (SCREEN) G2 pour obtenir une tension continue d'impulsion d'essai de 160 V (niveau max. absolu).



Autre possibilité de réglage G2

Il est conseillé de suivre la procédure mettant en oeuvre un oscilloscope pour obtenir un réglage précis.

- Régler la luminosité et le contraste sur leurs valeurs nominales (32).
- Débrancher la fiche AV de la prise V.TAPE. Débrancher également le câble en nappe à 6 conducteurs reliant le téléviseur (14P19, coordonnées 1C) et le magnétoscope. Appuyer sur la MIAPE ...
- Recouvrir la cellule 58PE1 (phototransistor) de la carte «Display & R PCR 58».
- Utiliser un voltmètre (Ri > 1 Mohm) pour mesurer la chute de tension au travers de 3R1, 3R2 et 3R3.
- A l'aide du potentiomètre 5R121 G2, régler pour obtenir une tension de 2 V au travers de la résistance présentant la chute de tension la plus faible (3R1, 3R2 ou 3R3).

Module 30, traitement Dolby Gain

- Ne régler que lors du remplacement des composants suivants : 30IC8, 30C1, 30C18, 30C19, 30C12, 30C13 et 30C134.
- Déposer ou soulever la résistance 30R23 montée en surface (coordonnées 2B).
- Raccorder un oscillateur BF à la pastille de soudure de 30R23 reliée à la borne 53 de 30IC8. Pour ce faire, insérer un condensateur électrolytique de 10 µF dont la borne positive est orientée vers la pastille (se reporter au schéma de réglage, page 5-1). Mettre à la masse la borne 2 de la liaison Power Link.
- Régler l'oscillateur BF pour qu'il génère une tension de 200 mV eff. env. à 5 kHz.
- Raccorder un voltmètre AF à la pastille de soudure de 30R23 reliée à la borne 53 de 30IC8 (entrée «AF surround»), lire le niveau et le noter.
- Raccorder le voltmètre AF à la cellule 30R10 (sortie «AF surround»).
 Régler 30C134 pour obtenir à la sortie (30R10) le niveau mesuré à l'entrée (30R23).
- Répéter l'opération ou contrôler que la mesure du gain avoisine ± 3 dB à 3 et 1 kHz.
- Remonter 30R23.

Module 40 «Picture in Picture» Filtre en cloche

- Raccorder une mire SECAM (barres de couleur verticales).
- Régler 40L1 pour obtenir une graduation optimale des couleurs des barres.
- Contrôler en raccordant le cas échéant une mire SECAM (barres de couleur horizontales). A l'aide d'un oscilloscope, vérifier que toutes les barres de couleur présentent le même niveau.

Module 10 «Output Amplifier» Réglage du niveau sonore des HP de grave et d'aigu Ne régler qu'en cas de remplacement de 10IC1, 10R58 ou 10R59, voire en cas de changement d'une des enceintes. Le module 10 «Output Amplifier» est identique pour les voies droite et gauche.

La valeur calibrée de l'enceinte neuve est estampée sur la face arrière. Pour le réglage, se référer à cette valeur.

- Débrancher la fiche A/V de la prise V.TAPE et la raccorder à un oscillateur BF:

14P21 borne 2 Entrée audio R (droite)

14P21 borne 4

Masse audio

14P21 borne 6 Entrée audio L (gauche)

- Taper Taper, appuyer sur sust jusqu'à ce que l'afficheur indique SPEAKER, puis taper (mode son 1 HP intérieurs du téléviseur).
- Pour régler les aigus appliquer un signal de 10 kHz. Mettre en oeuvre la sortie de l'oscillateur BF et les touches de volume sonore et du Beo4 pour régler le niveau de l'entrée 10P57-3 et obtenir 250 mV.
- Pour régler les graves, appliquer un signal de 1 kHz. Mettre en oeuvre la sortie de l'oscillateur BF et les touches de volume sonore et du Beo4 pour régler le niveau de l'entrée 10P57-3 et obtenir 250 mV.
- Raccorder le voltmètre AF au niveau de la sortie de l'enceinte correspondante (il n'est pas obligatoire de raccorder les enceintes pour ce réglage).

Graves:

10P60-1

Sortie graves

10P60-2

Non affecté Masse graves

Aigus:

10P60-3 10P60-4

Sortie aigus

10P60-5

Masse aigus

 Régler la tension de sortie des HP pour qu'elle corresponde à la tension indiquée dans le tableau en regard de la valeur estampée sur la face arrière de l'enceinte.

Réglage des graves: 10R59 (coordonnées 1E) Réglage des aigus: 10R58 (coordonnées 1D)

| Rated value in dB | Bass | Treble |
|-------------------|--------|--------|
| +2,00 dB | 1,41 V | 2,04 V |
| +1,75 dB | 1,46 V | 2,10 V |
| +1,50 dB | 1,50 V | 2,16 V |
| +1,25 dB | 1,54 V | 2,23 V |
| +1,00 dB | 1,59 V | 2,29 V |
| +0,75 dB | 1,63 V | 2,36 V |
| +0,50 dB | 1,68 V | 2,43 V |
| +0,25 dB | 1,73 V | 2,50 V |
| 0,00 dB | 1,78 V | 2,57 V |
| - 0,25 dB | 1,83 V | 2,65 V |
| - 0,50 dB | 1,88 V | 2,72 V |
| - 0,75 dB | 1,94 V | 2,80 V |
| - 1,00 dB | 2,00 V | 2,88 V |
| - 1,25 dB | 2,06 V | 2,97 V |
| - 1,50 dB | 2,12 V | 3,05 V |
| - 1,75 dB | 2,18 V | 3,14 V |
| - 2,00 dB | 2,24 V | 3,24 V |

Remplacement du module 10 «Output Amplifier»

En remplaçant le module 10 «Output Amplifier», régler les sorties (graves et aigus) sur leurs valeurs nominales (0,00 dB) en suivant la procédure de réglage du niveau sonore des HP de grave et d'aigu. Le module 10 «Output Amplifier» est identique pour les voies droite et gauche.

Module 12 IF

Ne régler qu'en cas de remplacement du module 12 IF ou de 12IC4 TDA9815 (coordonnées 2A).

Fiche d'essai 1P89:

Borne 1 Masse Borne 2 5 V

Borne 3 BF gauche (CH SEP)

Borne 4 V_{CAF}

Borne 5 BF droite

Borne 6 Point de commutation V_{CAG}

 Raccorder un signal d'antenne présentant une fréquence connue (XXX.25 MHz) et une modulation stéréo A2.

Sélectionner «arrêt CAF» (AFC off) dans le menu de configuration de

Régler le sélecteur de canaux sur la fréquence connue en tapant :

x y (chiffres) , puis sélectionner un numéro de programme x y (chiffres) .

AFC (CAF)

- Raccorder un voltmètre cc à la borne 4 de 1P89 (V_{CAF}).
- Régler 12L5 (coordonnées 2B) avec une clé non magnétique pour obtenir une tension de 1,95 V ± 0,1 V à la borne 1P89-4 (V_{CAF}).

AGC Takeover (point de commutation CAG)

- Régler le signal d'antenne sur 2 mV.
- Raccorder un voltmètre cc à la borne 6 de 1P89 (point de commutation V_{cos}).
- Régler 12R112 (coordonnées 2B) pour obtenir une tension de 7,3 V \pm 0,1 V à la borne 1P89-6 (point de commutation V_{cos}).

Séparation des voies

- Raccorder un oscilloscope à la borne 3 de 1P89.
- Régler 12R113 (coordonnées 2B) pour obtenir une diaphonie minimale.

CONSEILS DE REPARATION Mode de maintenance

Menu de maintenance (Service menu)

Le mode de maintenance (Service mode) se subdivise en un menu de maintenance et en un mode ignorant les erreurs sur le bus ("Bus ignore mode").

Le menu de maintenance permet, entre autres, de régler l'image et la géométrie, se reporter au paragraphe "REGLAGES DE MAINTENANCE AVEC LE Beo4". La description suivante met en oeuvre une télécommande Beo4.

- Accès au menu de maintenance: Taper re tve menu , sélectionner l'option "Setup" avec la touche et entrer 60 composible de revenir en arrière en appuyant sur re stop . Pour quitter le mode de maintenance, appuyer sur ou composible de revenir en arrière.

Service menu

- 1 Monitor
- 2 TV-tuner
- 3 V.Tape

Le menu de maintenance permet de sélectionner la source à régler, à reconfigurer ou à consulter pour obtenir de plus amples informations.

Sélectionner "Moniteur" (monitor) en tapant

Monitor service menu

- 1 Monitor information
- 2 Service counters
- 3 Picture adjustments
- 4 Geometry adjustments
- 5 Text Registers
- 6 WSS setting

Le menu de maintenance dédié au moniteur (Monitor service menu) permet de consulter les informations suivantes:

(Le réglage de l'image et de la géométrie est décrit dans le paragraphe consacré au réglage).

Menu "information moniteur", taper

| 06.164 | 4.0 | C) 4/ | 2.0 | | |
|---------------|---------|--------------|--------------|--|--|
| 06 IC1 | AP: | SW | 3.0 | | |
| 14 IC707 | FEP: | SW | 1.6 | | |
| Item no. | | | 1200001 | | |
| Serial no. | | | 12345678 | | |
| Last TV error | | 0126 88 - 2B | | | |
| | | | 0120 8A - 2B | | |
| | | | 1222 MRF | | |
| | | | | | |
| | | | **** ***** | | |
| Last ML/S | L error | | NO | | |

- Version du logiciel
- Référence et numéro de série
- Dernière erreur TV
- Dernière erreur ML/SL

Derrière erreur

Le téléviseur est à même de détecter certains types d'erreur et de les afficher sur l'écran.

Les cinq derrières anomalies ayant affecté le téléviseur sont visualisées sous forme de codes d'erreur et horodatées (quatre chiffres - mois et date) par l'horloge interne du système au moment de l'anomalie. Les erreurs les plus récentes sont indiquées en premier. Le mois et la date sont remplacés par quatre points d'interrogation si l'anomalie concerne l'horloge du matériel (14IC708 MK41T56).

En l'absence d'erreur, le texte sont remplacées par des points.

Les erreurs TV suivantes peuvent être affichées:

..... Aucune erreur enregistrée

DF Absence de donnée

OL Surcharge

MDL Interblocage avec le CI "megatext"
MRF Panne réinitialisation du CI "megatext"

XX-YZ (XX = adresse IIC

Y = adresse sur le bus IIC, bus 1 ou 2 Z = segment de bus IIC éventuel A/B/C/D).

Le second code d'erreur porte sur la détection d'erreur dans le système Master Link.

Les erreurs suivantes peuvent être signalées:

"Last ML/SL error" NO = aucune erreur enregistrée

"Last ML/SL error" CI = configuration de l'adresse impossible

"Last ML/SL error" TD = données ML au niveau bas

"Last ML/SL error" TU = données ML au niveau haut

"Last ML/SL error" -- = autres erreurs possibles indéfinissables

Il convient d'effacer le code d'erreur après avoir réparé l'anomalie signalée sur l'afficheur. Pour ce faire, appuyer sur don dans le menu "information moniteur".

Ce type d'erreur traduit une absence d'échange de données sur le bus quand le micro-calculateur essaie de dialoguer avec une adresse définie. Dans la majorité des cas, cette erreur signifie que le CI adressé est défectueux. Mais l'anomalie peut également être imputable à un composant périphérique du CI ou à d'autres composants du bus.

Adresses intervenant lors d'une erreur sur le bus IIC: Dernière erreur sur le bus 1

62-1 14IC707, Convertisseur de bus de données 83C528

D0-1 14IC708, Horloge MK41T6

Dernière erreur sur le bus 2

| 94 - 2D | 14IC501, Commutation vidéo TEA6425 |
|---------|-------------------------------------|
| 96 - 2D | 14IC502, Commutation vidéo TEA6425 |
| 90 - 2D | 14IC503, Commutation vidéo TEA6425 |
| 80 - 2D | 14IC250, Commandes son TDA7314S |
| 22 - 2A | 7IC1, Processeur télétexte SDA5273P |
| 88 - 2B | 2IC14, Processeur vidéo RVB TDA4780 |
| 4A - 2B | 2IC13, Expanseur de porte PCF8574 |

8A - 2B 2IC7, Décodeur couleur & processeur synchro TDA9162

CO - 2C 1TU1, Sélecteur de canaux TV UV916 84 - 2C 1IC3, Décodeur stéréo A2 TDA8417

C6 - 2C 20TU1, Sélecteur de canaux satellite SXT2001CDI

C4 - 2C 20TU1, Sélecteur de canaux satellite SXT2041CD

B6 - 2C 31IC7, Décodeur stéréo NICAM CF70088

2E - 2B 40IC5, Processeur incrustation d'image dans l'image SDA9188

88 - 2D 30IC7, Commandes son TDA7318D 4C - 2D 30IC4, Expanseur de porte PCF8574

4E - 2D 30IC3, Expanseur de porte PCF8574

Erreur sur le bus IIC

Absence de données (Data failure)

Le micro-calculateur remplace les données manquantes par la valeur par défaut mémorisée dans la PROM (6IC1) si une anomalie affecte l'EEPROM (6IC4) et empêche de lire les données de géométrie et d'image appliquées au téléviseur.

Surcharge (Overload)

Le téléviseur se ferme si, après 20 tentatives, 2IC7 (TDA9162) n'arrive pas à démarrer en mode vidéo. Ce phénomène peut se produire en cas d'anomalie dans les circuits de déviation.

Interblocage du CI "megatext"

Erreur d'échange de données avec le CI télétexte 7IC1 (SDA5273P) quand le téléviseur est mis sous tension. Le téléviseur commute en mode veille.

Panne de réinitialisation du Cl "megatext"

Erreur d'échange de données avec le CI télétexte 7IC1 (SDA5273P) quand le téléviseur en veille est allumé. Le téléviseur reste en mode veille.

Dernière erreur (Last error) ML/SL CI

Défaut dans la configuration de l'adresse. Aucune adresse n'est attribuée car la liaison met en oeuvre un nombre excessif d'unités.

 Isoler l'ensemble des unités raccordées à la liaison et les rebrancher l'une après l'autre. Ne pas oublier que cette mesure concerne également le câble en nappe hexapolaire reliant le téléviseur et le magnétoscope.

Dernière erreur (Last error) ML/SL TD

La liaison présente un niveau bas. Cette erreur peut également traduire un court-circuit physique dans la liaison, dans ses pilotes ou dans le circuit ML maître/source du téléviseur.

- Vérifier que la borne 15 (ML M/S) de 14IC13 délivre des impulsions.
 La fréquence doit avoisiner 1,5 ms (le téléviseur est maître).
- Isoler l'une après l'autre les unités raccordées à la liaison tout en vérifiant que la liaison autorise un échange de données. Ne pas oublier que cette mesure concerne également le câble en nappe hexapolaire reliant le téléviseur et le magnétoscope.

Dernière erreur (Last error) ML/SLTU

La liaison présente un niveau haut. L'anomalie est imputable au niveau trop bas de la résistance de travail du système ou à une erreur dans les pilotes de la liaison.

Débrancher la liaison externe du téléviseur. Ne pas oublier de débrarcher également le câble en nappe hexapolaire reliant le téléviseur et le magnétoscope. Mettre le téléviseur sous tension et vérifier qu'il ém et dans les 3 à 4 secondes qui suivent un télégramme de 15 ms env. au niveau de la borne 13 de 14IC13 (ML TRANSMIT). Il devrait être possible de mesurer un signal identique temporisé de 10 à 15 µs à la borne 14 de 14IC13 (ML RECEIVE).

Sélectionner l'option "registres télétexte" (Text registers) du menu de maintenance dédié au moniteur en tapant par 5 mai.

| Test | Regist | er setu | ıp | | | | | |
|----------------------|-----------------------|----------|----------|----------|----------|----------|----------|--|
| R01 5 R09 0 | R02 11 R10 0 | R03 0 | R04 0 | R05 0 | R06 0 | R07 0 | R08 0 | |

Dans certaines installations câblées, une erreur affectant le temps de propagation de groupe est susceptible d'altérer la réception du télétecte. Il est possible d'éviter ce problème en insérant, en série avec le signal vidéo composite appliqué au décodeur télétexte, un filtre. Les chiffres figurant sous les registres R01 à R10 correspondent à des numéros de programme. La présence d'un 0 en regard de chaque registre indique qu'aucun des numéros de programme n'a de filtre. Pour insigner un filtre dans un programme, sélectionner un registre en tapant

WSS setting

, puis entrer le numéro de programme souhaité. Terminer en appuyant sur 6000.

Dans notre exemple, un filtre est inséré dans les programmes 5 et 11. Le filtre n'est opérationnel qu'après avoir commuté une nouvelle fois sur le programme concerné.

Sélectionner l'option "WSS setting" dans le menu de maintenance dédié au moniteur, appuyer sur

WSS setting

WSS On

Certains émetteurs TV envoient une information facilitant l'identification du format d'image, permettant ainsi au téléviseur de commuter automatiquement sur le format idoine quand la fonction WSS est en service. L'option "WSS On" porte sur l'ensemble des sources d'image, qu'il s'agisse du sélecteur de canaux TV, satellite ou vidéo, ou de la lecture vidéo. La détection peut ne pas toujours être fiable dans certaines conditions, notamment en présence d'un mauvais rapport signal/bruit. Il peut en résulter une commutation sur un format inadéquat. Pour cette raison, l'option WSS peut être réglée sur "Off".

L'option WSS peut également être réglée sur "Broadcast only". Dans ce cas, la détection porte uniquement sur les signaux émis par les sélecteurs de canaux TV et satellite.

Sélectionner l'option "compteurs de maintenance" (Service counters) du menu de maintenance dédié au moniteur en tapant (1997).

Monitor service counters

Stand-by (days) 0000 Audio mode (days) 0000 Video mode (days) 0000 On/Off (times ★10) 0000

La ligne "On/Off (times ★10)" indique le nombre de fois que le téléviseur a été commuté en mode veille. Ce nombre est affiché en dizaines d'unités. Seules les 4 unités de plus faible poids sont reprises si le nombre comprend plus de 4 chiffres (exemple: 12834 est affiché sous la forme 2834). Les autres indications de temps du menu sont exprimées en jours complets.

Sélectionner l'option "sélecteur de canaux TV" (TV-tuner) du menu de maintenance en tapant [2002].

TV service setup AFC Tuner system On High tuning range Low tuning range 860 45 Upper band limit Lower band limit 170 450 Uhf const Vhf-1 const Vhf-2 const 49 162 148

Dans le menu de configuration de maintenance TV (TV service setup menu), seules sont mises en oeuvre les options "norme sélecteur de canaux" (Tuner system) et "CAF" (AFC). Les autres indications s'adressent à l'usine. Il est interdit de les modifier.

Norme du sélecteur de canaux:

Le nombre inscrit dans cette zone indique la norme TV couleur retenue dans la définition de la FI correspondante.

Il convient de régler ce nombre si la carte "Tuner & MF" est changée pour capter une autre norme TV couleur.

Les valeurs affectées aux différentes normes sont les suivantes:

B/G = 1 L/L' = 2 M = 4 D/K = 8 I = 16

La valeur applicable à un ensemble de normes s'obtient en additionnant les différents nombres en question.

Les valeurs des variantes FI du BeoVision Avant sont les suivantes:

B/G = 1 B/G/L/L' = 3 I = 16 B/G/L/L'/I = 19 B/G/M/D/K/I = 29

Taper pour mémoriser la valeur.

La fonction "marche/arrêt CAF" (AFC On/Off) s'utilise lors du réglage. Mais elle peut également s'avérer utile dans d'autres contextes.

Appuyer sur pour commuter entre "marche" (On)

Appuyer sur / pour commuter entre "marche" (On) et "arrêt" (Off).

Il est impossible de mémoriser l'option "arrêt CAF". Le CAF est toujours en service quand le mode veille est adopté.

Sélectionner l'option "magnétoscope" (V.Tape) du menu de maintenan ce en tapant se sa la Sélectionner l'option "information" dans le me_{ll}u de maintenance dédié au magnétoscope en tapant se sa la se s

Ce menu d'information permet, entre autres, de connaître les versions du logiciel du magnétoscope.

Le mode de maintenance dédié au magnétoscope est décrit dans la lot îce de maintenance du magnétoscope BeoVision Avant.

Mode ignorant les erreurs sur le bus (Bus Ignore Mode)

Il est possible de mettre le téléviseur en service et d'ignorer l'erreur éventuelle qui affecte le bus IIC et qui contraint le téléviseur à commuter en mode veille chaque fois qu'une tentative de mise en marche est entreprise.

- Le téléviseur doit être en veille depuis au moins 5 secondes.
- Court-circuiter la fiche de maintenance P84 de la carte PCB14 "AV Switch" (coordonnées 4L) durant au moins 0,5 seconde.
- Remédier au court-circuit.
- Appuyer sur le tveet. Le téléviseur se met alors en service en adoptant, le cas échéant, le mode ignorant les erreurs sur le bus.

Options

La programmation du téléviseur peut retenir cinq options.

Option 0 = Absence de réception IR

Option 1 = Deux récepteurs IR dans la même pièce principale

Option 2 = Un récepteur IR dans la pièce principale

Option 5 = Deux récepteurs IR dans la même pièce secondaire

Option 6 = Un récepteur IR dans la pièce secondaire

Exemple de programmation à l'aide du Beo4:

- Le téléviseur doit être en mode veille.

- Taper , maintenir la touche enfoncée et appuyer sur usr .

Taper Go, puis usr jusqu'à ce que l'afficheur du Beo4 indique V.OPT. Entrer alors le numéro de l'option souhaitée.

Le téléviseur est programmé d'usine sur l'option 1.

Cartes "Sound Output PCB10" et "ABL PCB11"

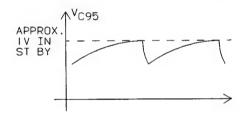
Lors des interventions de maintenance sur les cartes "Sound Output PCB10" et "ABL PCB11", il peut s'avérer opportun de déposer la plaque de refroidissement qui masque une partie des composants. Le CI de sortie STK peut aisément fonctionner quelques instants sans plaque de refroidissement si la modulation est faible.

Alimentation à découpage (SMPS) de la carte PCB4

Les conseils de réparation suivants peuvent s'avérer utiles en cas d'anomalie dans le bloc d'alimentation principale à découpage de la carte PCB4.

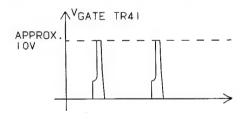
Il est conseillé de remplacer également TR84, TR85 et TR86 si TR41 est défectueux (se contrôle très rapidement avec un ohmmètre). Si TR41 est en bon état, vérifier les points suivants:

- 1. La tension traversant C4 doit dépasser 250 V env. Dans la négative, il se peut que le fusible ou D1 soit défectueux.
- 2. La tension d'alimentation appliquée à C83 doit avoisiner 6 V lors de la mise en marche. Le bloc d'alimentation ne démarre pas si elle est inférieure. Ce phénomène peut être imputable à un composant défectueux qui prélève trop de courant sur la ligne d'alimentation.
- 3. Le bloc d'alimentation ne peut démarrer si TR61 est court-circuité. La tension traversant C83 avoisine 6 V.
- 4. Le circuit de protection TR91 et d'autres cellules sont actionnés si C95 n'est pas traversé par une tension continue mais par une tension présentant l'allure ci-dessous. Ce phénomène peut s'expliquer par une surcharge du bloc d'alimentation ou par le court-circuit d'un condensateur électrolytique, voire d'une diode montée sur l'une des lignes d'alimentation. La même anomalie apparaît si L91 est découplé.



5. Isoler le drain de TR41 (soulever J5). Raccorder une tension continue externe de 15 à 20 V pour alimenter C83 et relier le téléviseur à la tension secteur. L'oscillateur doit alors fonctionner à 20 kHz. Une tension continue avoisinant 1,3 V doit traverser C95. La tension ne doit pas présenter l'allure de la fig. ci-dessus.

La tension au collecteur de TR83 doit être rectangulaire. Cette allure est amplifiée dans TR84, puis appliquée à la gâchette de TR41.



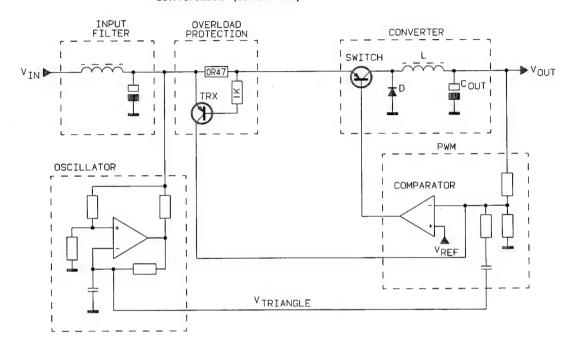
6. Vérifier que la borne 2 de P42 commute au niveau haut si le télévis eur en veille ne peut pas se mettre en marche en mode audio.

Alimentation à découpage 50kHz

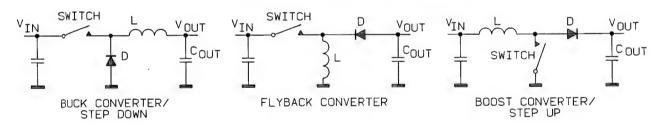
Le BeoVision Avant présente trois petits blocs d'alimentation à découpage. Ils sont logés sur les cartes "AV Switch PCB14", "Satellit PCB20" et "Dolby Surround PCB30".

Ces trois alimentations à découpage reposent sur des principes différents mais présentent toutes les composants suivants:

- Oscillateur
- Circuit de réaction/modulateur de largeur d'impulsion (PWM)
- Filtre d'entrée
- Circuit de protection
- Convertisseur (contacteur)



Ces trois principes sont schématisés ci-dessous:

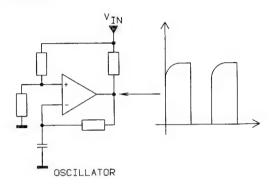


Origines vraisemblables des anomalies affectant le convertisseur

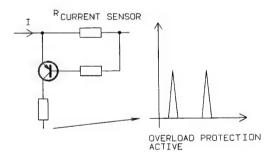
- Contacteur défectueux → absence de Vout ou Vout = Vin.
- Diode défectueuse → absence de Vout ou Vout = Vin.

Conseils généraux pour rechercher les pannes

- 1. Contrôler la tension au niveau du collecteur du transistor de commutation. Elle doit être rectangulaire avec éventuellement quelques rebondissements. Les impulsions présentent une fréquence de 50 kHz env. L'alimentation à découpage ne fonctionne pas s'il s'agit d'une tension continue. Une anomalie peut affecter l'oscillateur, le transistor de commutation ou la diode du convertisseur.
- 2. Vérifier que l'oscillateur fonctionne à une fréquence de 50 kHz env. Dans la négative, l'oscillateur peut présenter une anomalie ou le circuit de protection être en service. L'oscillateur de toutes les petites alimentations à découpage adopte la même configuration et met en oeuvre un comparateur.



3. Voir si le circuit de protection est en service. Dans l'affirmative, le phénomène peut s'expliquer par une surcharge ou par un composant défectueux dans l'alimentation à découpage. Couper la charge pour localiser l'erreur. Le circuit de protection délivre une impulsion quand le courant traversant le transistor de commutation est trop important. Dans ce cas, le transistor bloque et ne réadopte l'état passant qu'au bout de 20 µs env.



DISMANTLING

Contrast screen and front frame

Remove the upper rear panel (6 screws).

ZERLEGUNG

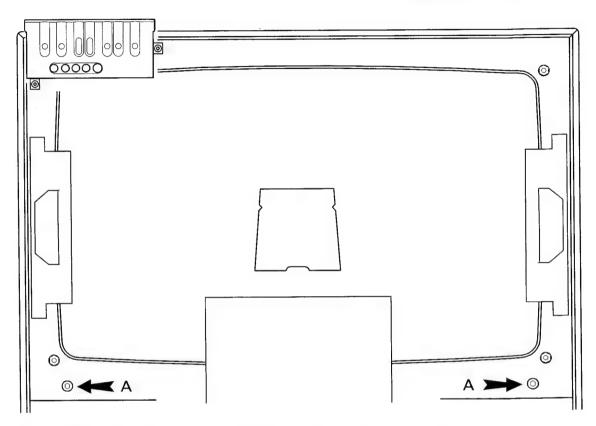
Kontrastscheibe & Frontrahmen

Das obere Rückwandteil (6 Schrauben) abmontieren.

DESASSEMBLAGE

Ecran de contraste et panneau frontal

Déposer la partie supérieure de la face arrière (6 vis).



Unscrew the screws A, and pull them backwards and out. A 4 mm box spanner is required. Remove the front frame. Lift up the front frame and pull it off.
Remove four screw, thereby removing the contrast screen.
When the front frame is installed, it must be "clicked" into place to be installed correctly.

Die Schrauben A lösen und nach hinten ziehen. Zum Lösen der Schrauben ist ein 4 mm Steckschlüssel zu benutzen. Der Frontrahmen muß abmontiert werden. Den Frontrahmen anheben und abziehen. 4 Schrauben und damit auch die Kontrastscheibe abmontieren. Bei der Montage des Frontrahmens muß dieser einschnappen, um korrekt zu sitzen (auf Klickgeräusch achten).

Desserrer les vis A et tirer en arrière. Utiliser une clé à douille de 4 mm. Il convient de déposer le panneau frontal. Pour ce faire, soulever et tirer. Dévisser 4 vis pour pouvoir déposer l'écran de contraste. L'écran de contraste est bien remonté quand il s'enclenche en émettant un clic audible.

Speaker front fabric

Pull the fabric frame outwards on the right-hand side, and push it towards the right.

Installation:

Fit the fabric frame guide pins into the pilot holes.

Press the fabric frame against the product at the centre, and push the Fabric frame towards the left.

Lautsprecherfrontstoff

Den Stoffrahmen auf der rechten Seite nach außen ziehen und anschließend nach rechts verschieben.

Montage:

Die Führungszapfen des Stoffrahmens in die Führungslöcher einsetzen. Den Stoffrahmen in der Mitte gegen das Gerät drücken und den Stoffrahmen nach links verschieben.

Panneau frontal en textile du haut-parleur

Tirer sur le côté droit du panne au en textile et le repousser vers la droite.

Montage:

Engager les tenons du panneau en textile dans les orifices de guidage. Appuyer le panneau en textile (au milieu) contre l'appareil et repousser le panneau vers la gauche.

Left- and right-hand front mouldings

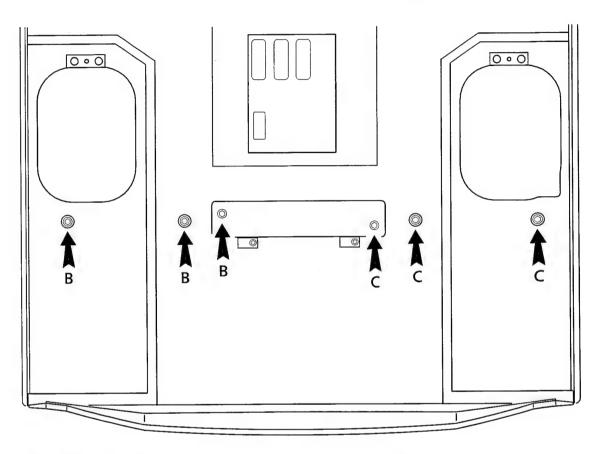
The VTR unit and the speaker cabinets have to be removed. See the applicable instructions below.

Linke und rechte Frontzierleiste

Die VTR-Einheit und die Lautsprechergehäuse müssen abmontiert werden. Siehe hierzu die entsprechenden Punkte.

Bandeaux décoratifs droit et gauche de la face avant

Il convient de déposer le magnétoscope et les enceintes des haut-parleurs. Se reporter aux points traitant de ces opérations.



Unscrew the screws B to remove the right-hand moulding and the screws C to remove the left-hand moulding. Zum Abnehmen der rechten Zierleiste sind die Schrauben B und zum Abnehmen der linken Zierleiste die Schrauben C herauszuschrauben. Enlever les vis B pour déposer le bandeau décoratif droit, les vis C pour le bandeau gauche.

Cassette flap

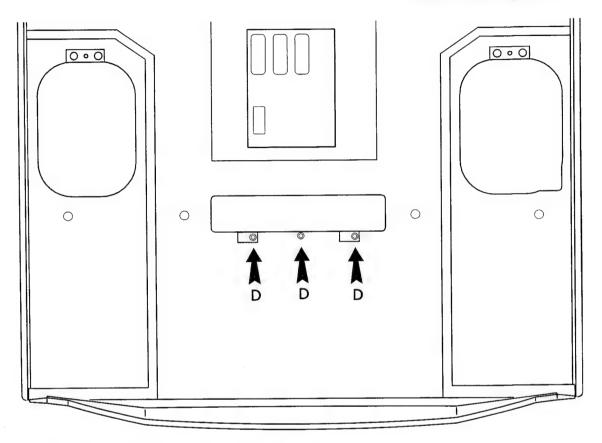
The left- and right-hand mouldings have to be removed. See the applicable instructions above.

Cassettenschachtklappe

Die linke und rechte Frontzierleiste müssen abmontiert werden. Siehe hierzu den entsprechenden Punkt.

Volet du compartiment de la cassette

Il convient de déposer les bandeaux décoratifs droit et gauche de la face avant. Se reporter au point traitant de cette opération.



Unscrew the screws D to remove the cassette flap.

Zum Abmontieren der Cassettenschachtklappe sind die Schrauben D herauszuschrauben. Dévisser les vis D pour déposer le volet du compartiment de la cassette.

VTR unit

(Gives access to e.g. the motorized stand electronics which are located in a housing on top of the motorized stand.)
Remove the lower rear panel (4 screws).

Remove the 4 screws (2 on each side) which hold the metal box containing the VTR unit.

The metal box containing the VTR unit can now be pulled backwards and out when the leads have been disconnected.

The mains lead and the 2-pole lead have to be disconnected from PCB60 which is located in the black plastic box containing the mains switch.

Installation:

Push home the metal box containing the VTR unit in the main frame, and then pull it approx. 3 mm backwards.

Tilt up the cassette flap, and carefully push the metal box containing the VTR unit into place, i.e. so that the pin on the left-hand side of the cassette lift goes into mesh with the cassette flap.

Speaker cabinets

Remove the upper rear panel (6 screws).

Remove the lower rear panel (4 screws).

Remove the speaker front fabric. See the applicable instructions above. Remove the screw at the top of the speaker cabinet, as viewed from the front.

The speaker cabinet can now be pulled backwards.

When installing the speaker cabinet, the two rubber dampers must be fitted on the towers at the bottom of the speaker cabinet, and they must be fitted into the holes in the bottom of the main frame.

VTR-Einheit

(Bietet u.a. Zugang zur Drehfußelektronik, die in einem Gehäuse oben auf dem Drehfuß angeordnet ist). Das untere Rückwandteil (4 Schrauben) abmontieren. Die 4 Schrauben (2 auf jeder Seite), die den Metallkasten mit der VTR-Einheit festhalten, abmontieren. Der Metallkasten mit der VTR-Einheit kann jetzt nach Demontage der zugehörigen Leistungen nach hinten herausgezogen werden. Die Netzleitung und die 2polige Leitung sind auf der Platine PCB60, die sich in der schwarzen Kunststoffbox mit dem Netzschalter befindet, abzumontieren.

Montage:

Den Metallkasten mit der VTR-Einheit in den Hauptrahmen ganz hineinschieben und ihn danach um ca. 3 mm nach hinten ziehen. Die Cassettenschachtklappe nach oben kippen und den Metallkasten mit der VTR-Einheit vorsichtig nach vorne schieben, so daß der Zapfen auf der linken Seite des Cassettenlifts mit der Cassettenschachtklappe einrastet.

Lautsprechergehäuse

Das obere Rückwandteil (6 Schrauben) abmontieren. Das untere Rückwandteil (4 Schrauben) abmontieren. Den Lautsprecherfrontstoff abmontieren. Siehe hierzu den entsprechenden Punkt. Die Schraube ganz oben am Lautsprechergehäuse (von vorne gesehen) abmontieren. Das Lautsprechergehäuse kann jetzt nach hinten gezogen werden. Bei der Montage des Lautsprechergehäuses müssen die 2 Gummipuffer auf die Türme am Boden des Lautsprechergehäuses gesetzt sein, und diese sind in die Löcher im Boden des Hauptrahmens zu setzen.

Magnétoscope

(Permet, entre autres, d'accéder à l'électronique du pied rotatif qui est logée dans un boîtier surmontant le pied proprement dit). Déposer la partie inférieure de la face arrière (4 vis). Enlever les 4 vis (2 de chaque côté) maintenant le coffret métallique et le magnétoscope. Il est alors possible de déposer le coffret métallique et le magnétoscope en tirant sur l'ensemble après avoir déconnecté les câbles correspondants. Débrancher le cordon d'alimentation et le câble à deux conducteurs de la carte PCB60 logée dans le coffret plastique noir présentant l'interrupteur secteur.

Montage:

Repousser le coffret métallique et le magnétoscope au fond du cadre principal, puis tirer légèrement (3 mm env.) l'ensemble vers soi. Soulever le volet du compartiment de la cassette, puis positionner avec précaution le coffret métallique et le magnétoscope en les repoussant pour que le tenon gauche du dispositif de levage de la cassette soit en prise avec le volet.

Enceintes des haut-parleurs

Déposer la partie supérieure de la face arrière (6 vis).
Déposer la partie inférieure de la face arrière (4 vis).
Enlever le panneau frontal en textile du haut-parleur. Se reporte au point traitant de cette opération.
Enlever la vis située en haut de

Enlever la vis située en haut de l'enceinte vue de devant. Il est alors possible de déposer l'enceinte en la tirant. Lors du remontage de l'enceinte, poser les 2 amortisseurs en caoutchouc sur les protubérances que présente la partie inférieure de l'enceinte et veiller à ce qu'ils se logent dans les orifices pratiqués dans le fond du cadre principal.

Service position of power chassis

Remove the upper rear panel (6 screws).

Unscrew the top display (2 screws). To be able to operate the product with the chassis in service position, the top display must be connected to the chassis.

Unplug the aerial plug from the tuner.

Unplug the plugs at P19 and P20 on PCB14. (P19 is connected to the VTR unit and P20 to the motorized stand.)

Take the lead connections to the chassis out of their cable holders. NOTE: when the product is assembled the leads must be reinstalled correctly in their cable holders.

Service-Position des elektrischen Chassis

Das obere Rückwandteil
(6 Schrauben) abmontieren.
Das Top-Display (2 Schrauben)
abschrauben. Um das Gerät mit
dem elektrischen Chassis in ServicePosition bedienen zu können, muß
das Top-Display unbedingt
Verbindung zum Chassis haben.
Den Antennenstecker aus dem
Tuner herausnehmen.

Die Steckverbindungen in P19 und P20 auf der Platine PCB14 abmontieren. (P19 hat Verbindung zur VTR-Einheit und P20 zum Drehfuß).

Die Leitungsverbindungen für das Chassis aus ihren Leitungshaltern lösen. Achtung! Wenn das Gerät zusammengebaut wird, sind die Leitungen wieder in die Leitungshalter korrekt anzubringen.

Position de maintenance du châssis électrique

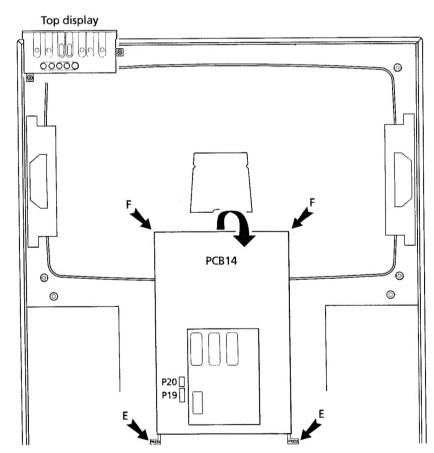
Déposer la partie supérieure de la face arrière (6 vis).

Dévisser l'afficheur supérieur (2 vis). Il est impératif que l'afficheur supérieur soit relié au châssis pour pouvoir commander l'appareil quand le châssis est en position de maintenance.

Débrancher la fiche d'antenne du sélecteur de canaux.

Débrancher les fiches raccordées à P19 et P20 sur la carte PCB14 (P19 est reliée au magnétoscope et P20 au pied rotatif).

Sortir des serre-câbles les fils raccordés au châssis. Attention! Lors du rassemblage, il convient de remettre correctement les fils dans les serre-câbles.



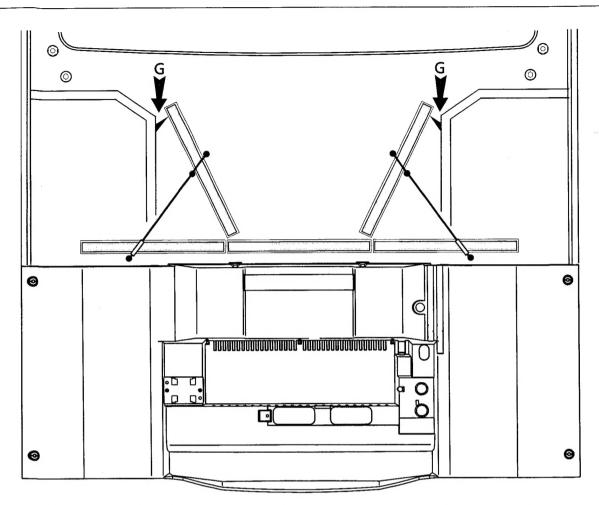
Press down the locking pins E, and pull out the chassis to the first stop. Grab the chassis frame at the points F at the top, and pull the chassis backwards.

The two PCB frames on either side of the chassis can now be tilted out and away from each other.

Die Verriegelungslaschen E nach unten drücken und das Chassis bis zum ersten Anschlag herausziehen. Den Chassisrahmen oben an den Punkten F anfassen und das Chassis nach hinten ziehen.

Die 2 Platinenrahmen auf beiden Seiten des Chassis können jetzt heraus- und auseinandergekippt werden. Appuyer sur les ergots de verrouillage E et sortir le châssis en le tirant jusqu'au premier cran. Prendre le haut du cadre du ch âssis par les points F et tirer le châs is en arrière.

Il est alors possible de pivoteret de désolidariser les deux cadres accueillant les cartes de chaque côté du châssis.



Hang the innermost PCB frame on either side on the hooks G in the aluminium brackets.

When assembling the product, make sure to fasten all leads in the cable holders. This will prevent the occurrence of clinking and clanking sounds at high volumes.

The EHT and focus cables must be run below the picture tube throat and tied to the cable holders on the deg aussing coil. Make sure that they do not come close to the right output amplifier since that could damage the output IC.

Der innere Platinenrahmen - auf jeder Seite des Chassis - wird auf die Haken G der Aluminiumwinkel gehängt.

Beim Zusammenbau des Gerätes ist es wichtig, daß alle Leitungen in den Leitungshaltern angebracht werden. Dadurch werden Klirr- und Klappergeräusche bei hoher Lautstärke vermieden.

Die EHT- und Fokussierkabel sind unter dem Bildröhrenhals zu verlegen und an den Leitungshaltern an der Entmagnetisierungsspule (Degauß-Spule) zu befestigen. Die dürfen nicht zu nahe am rechten Ausgangsverstärker liegen, da der Ausgangs-IC dadurch beschädigt werden kann.

De chaque côté du châssis, accrocher dans les cornières en aluminium G le cadre intérieur accueillant une carte.

En rassemblant l'appareil, veiller à regrouper tous les fils dans les serre-câbles. Cette mesure vise à éviter tout cliquetis ou bruit quand l'intensité sonore est élevée. Amener les fils de concentration et de THT sous le col du tube cathodique et les coincer dans les serre-câbles de la bobine de démagnétisation. Ces fils ne doivent pas se trouver à proximité de l'amplificateur de sortie droit sous peine d'endommager le CI de sortie.

Mains Distribution, PCB60 (with mains fuse)

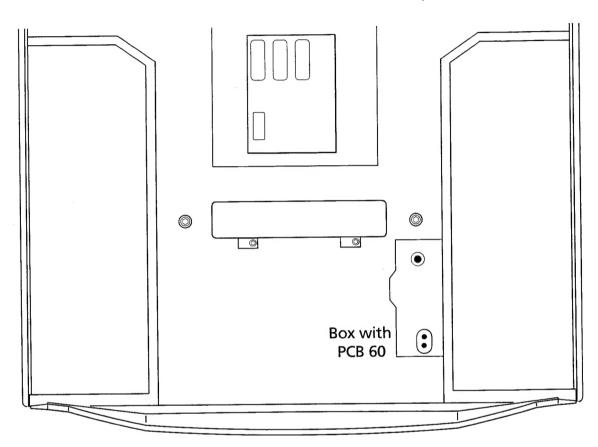
Remove the VTR unit. See the applicable instructions above.

'Mains Distribution'-PCB60 (mit Netzsicherung)

Die VTR-Einheit ausbauen. Siehe hierzu den entsprechenden Punkt.

Carte PCB60 "Mains Distribution" (dotée d'un coupe-circuit secteur)

Déposer le magnétoscope. Se reporter au point traitant de cette opération.



The cover of the black plastic box holding PCB60 can now be unclipped.

Der Deckel der schwarzen Kunststoffbox, wo die Platine PCB60 angeordnet ist, kann jetzt abgenommen werden. Il est alors possible de sortir de ses clips le couvercle obturant le pe tit boîtier noir.

Motorized stand

Carefully place the BeoVision Avant on its side.

Remove the 4 pieces of tape covering the holes in the bottom of the motorized stand.

Turn the motorized stand until the 4 holes in the bottom are aligned with the screws.

Unscrew the 4 screws to remove the motorized stand.

The aluminium sheet on the motorized stand is fixed with double-sided adhesive tape.

Drehfuß

BeoVision Avant vorsichtig auf die Seite legen.

Die 4 Klebebandabdeckungen der Löcher im Boden des Drehfußes entfernen.

Dann so lange am Drehfuß drehen, bis die Schrauben durch die 4 Löcher im Boden des Drehfußes zugänglich sind

Zur Demontage des Drehfußes die 4 Schrauben herausschrauben. Das Aluminiumblech auf dem Drehfuß ist mit Doppelklebeband befestigt.

Pied rotatif

Poser délicatement le BeoVision Avant sur le côté.

Enlever les 4 bandes masquant les orifices pratiqués dans la plaqu € de fond du pied rotatif.

Tourner le pied rotatif jusqu'à ce que les 4 orifices de la plaqued e fond soient en regard des vis. Dévisser les 4 vis pour déposer le pied rotatif.

Un ruban adhésif double face maintient la plaque d'aluminiu m sur le pied rotatif.

INSULATION TEST

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer.

Flashovers must not occur during the testing procedure!

Make the insulation test as follows: Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester. Connect the other terminal to ground on the aerial socket.

NOTE!

To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 1.5 kV is obtained. Maintain that voltage for one second, then slowly turn it down again.

ISOLATIONSPRÜFUNG

Nach einer Zerlegung ist bei jedem Gerät eine Isolationsprüfung vorzunehmen. Die Prüfung wird dann ausgeführt, wenn das Gerät wieder vollständig zusammengebaut und zur Auslieferung an den Kunden bereit ist.

Überschläge dürfen während der Prüfung nicht vorkommen!

Die Isolationsprüfung in folgender Weise durchführen:
Die beiden Steckerstifte am Netzstecker kurzschließen und an eine der Anschlußklemmen des Isolationsprüfers anschließen. Die andere Anschlußklemme an die Masse des Antennenanschlußes anschließen.

ACHTUNG!

Um Beschädigungen des Gerätes zu vermeiden, ist es wichtig, daß beide Anschlußklemmen des Isolationsprüfers einen sehr guten Kontakt haben.

Die Spannungsregelung des Isolationsprüfers langsam nach oben drehen, bis eine Spannung von 1,5 kV erreicht wird. Diese Ein-stellung 1 Sekund aufrechterhalten, und anschließend die Spannung wieder langsam nach unten drehen.

TEST D'ISOLEMENT

Il convient de soumettre l'appareil à un test d'isolement après l'avoir désassemblé. Ce test est effectué après avoir réassemblé l'appareil et avant de la remettre au client.

Aucun amorçage doit se produire lors du test!

Procéder au test d'isolement comme suit:
Court-circuiter les deux broches de la fiche secteur et les raccorder à une des bornes du testeur d'isolement. Raccorder l'autre borne à la broche d'une des prises d'antenne.

ATTENTION!

Pour éviter d'endommager l'appareil, il est important que les deux bornes du testeur d'isolement possèdent un bon contact.

Tourner lentement la tension sur le testeur d'isolement jusqu'à arriver à 1,5 kV. Maintenir cette tension pour 1 seconde, puis la diminuer lentement de nouveau.